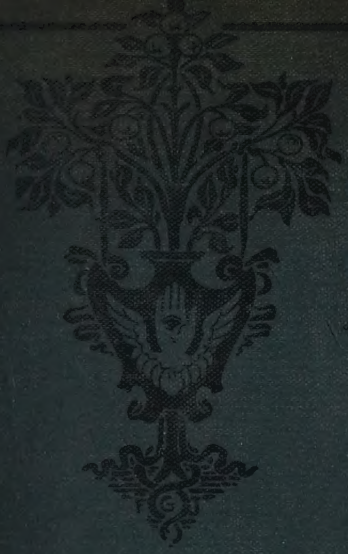

THEORY & PRACTICE OF DESIGN

BY FRANK G. JACKSON

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THEORY AND PRACTICE OF DESIGN.

THEORY AND PRACTICE OF DESIGN.

AN ADVANCED TEXT-BOOK ON DECORATIVE ART.

BEING A SEQUEL TO THE AUTHOR'S

"LESSONS ON DECORATIVE DESIGN."

BY

FRANK G. JACKSON,

LECTURER ON

PRINCIPLES OF ORNAMENT, ADVANCED DESIGN, AND TEACHER OF TECHNICAL ART PROCESSES, ETC., IN THE BIRMINGHAM MUNICIPAL SCHOOL OF ART.

Seven Hundred Illustrations.

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TO THE MEMORY OF THE LATE

F. W. MOODY

THE FOLLOWING PAGES ARE GRATEFULLY DEDICATED.

PREFACE.

The kind way in which a former book of mine, "Lessons on Decorative Design," was received by critics, teachers, and students, has led me to yield to a widely expressed desire that I should write a more advanced work on the same subject. Hence the present volume, which, I trust, may be of service to those for whom it is specially designed. Like the previous volume, it does not pretend to be a book *of* designs, but a book *on* design — not a picture book, but a school text-book.

The illustrations and diagrams have been selected and designed with the view of explaining principles and directing practice. Many of them are reproductions of impromptu sketches drawn on the blackboard while lecturing to my classes. Throughout the work I have insisted on the observance of principles, regard for construction, and the law of development. These are

necessary aids in the infant stage of a student's education. They will not seem so important to him as years advance. With the increase of knowledge and experience he will come to see how far rule and precept may be wisely relaxed, and will enter on the enjoyment of that true freedom which is the heritage of the well-grounded student.

FRANK G. JACKSON.

March, 1894.

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INTRODUCTORY.

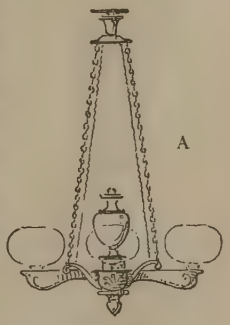
IN a former work, "Lessons on Decorative Design," I endeavoured to show the origin of decorative art, that it mainly arose out of construction, and that subsequent developments were the result of the endeavours to combine with inventive forms other details borrowed from Nature by the active co-operation of man's imitative and inventive powers. The book being an elementary one, the student's attention was only invited to the consideration of ornamental elements, either composed of simple constructive forms of a geometrical character, or derived from the vegetable world. In the following pages I propose to treat further of these, and also of others not previously considered. Some of the latter claim a higher rank in decorative art; the principles advocated in the

earlier book will also be applied and more fully elucidated.

The history of ornament shows that, while it is in the main based upon construction, it has been largely and splendidly developed by the addition of a vast number of elements derived from every part of the natural world. Modern decorative art has, however, been made so to depend upon natural objects for its material that it is in constant peril of losing its essential characteristics. This danger arises, not so much from the fact of the employment of natural forms, as from the temptation to indulge in realism—a temptation due to the great advance made in imitative art. The principle of irregularity, the chief characteristic of the picturesque, has thus been unduly emphasized to the almost complete neglect of the principle of order, which is the basis of decorative art inherited from construction. Giving way to the imitative temptation in ornamental art leads to various bad results. Observe, for instance, the decoration of many modern rooms, the walls, ceilings, doors, etc., covered, in childish wilfulness, with a variety of realistic "patterns." While the effect produced may be regarded as a "new departure," it will suggest, to the mind of any one who really possesses but an elementary knowledge of ornamental art, that the pictorial treasures of the household have deserted their proper boundaries, and settled down in a

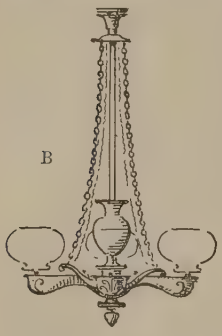
haphazard fashion in utter disregard of that useful maxim, "A place for everything, and everything in its place."

A careful study of the development of art, particularly in its earliest stages, will correct many a false notion respecting this matter, and will tend, more than anything else, towards the formation of style. Another good to be obtained by such study will be a clearer perception of first principles, *i.e.* the causes which have led to certain forms in art. Industrial designers are so accustomed to the elaborate decorative objects which are current, that the reasons for the particular forms they have assumed are rarely sought after; and, if a new design is wanted for an old purpose, a mere alteration or rearrangement of parts is held to be sufficient to effect a new pattern. Take an illustration from the time of the transition of the old oil lamp to the modern gasalier. This transition occurred about forty years ago, when gas was gradually supplanting oil as an illuminant in private houses. The constituents of the oil lamp were: a body with projecting arms and chains for suspending from the ceiling, in the centre a reservoir to hold the supply of oil, with outlets to feed the burners by gentle and regular percolation (*see* A). Here the conditions attached to the use of oil were well

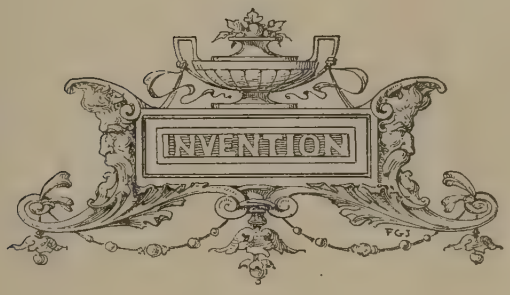


A

met. But, when gas had to be used, the designers failed to grasp the nature of the new conditions, and simply adapted the old and current form of lamp, retaining parts that were wholly unnecessary. They introduced a tube down the centre, through the obsolete oil reservoir, with a gas box underneath ; from this gas box smaller tubes were laid in the arms, whilst the taps, for turning on the gas, were awkwardly placed at the top (*see* B). Now, if a designer had considered the peculiarities of gas and the mode of supplying it, he would have seen that all that was absolutely necessary were (1) a tube which would serve the double purpose of suspending the lamp and conveying the gas, (2) projecting arms, not necessarily horizontal as was required in the oil lamp, and (3) a tap to turn on and regulate the light. There would be no reason either for chains or vase, or for retaining the form of "spout," as the arm was technically called. Doubtless economic reasons had something to do with the retention of these useless forms, as manufacturers would naturally be desirous of utilising old "patterns." But this does not explain all, for we find that, when new patterns were made, they ran upon the old lines of the oil lamp, and that the useless parts were



repeated in a more or less objectionable form. The chain, for instance, whose real office was gone, was made of flimsy stamped metal, and was hung in the place as before — a convicted sham, unable to support any moderate weight. Although many of the parts came to be regarded as superfluous, it is astonishing how slowly they were given up. Even to this hour many gasaliers show the survival of the vase-shaped reservoir—a survival, not of the fittest, but of the reverse.



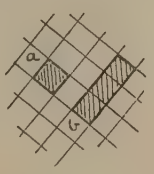
CHAPTER I.

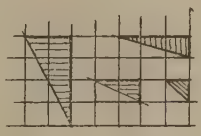
ELEMENTARY FORMS AND METHODS OF ARRANGEMENT.

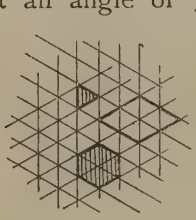
WHILE it is proposed in the present treatise to direct the student's attention to advanced studies in decorative art, it will be necessary to revert to an elementary stage in order to make the course of lessons now entered upon as complete as possible, and to emphasize, more fully than the limits of the former elementary work allowed, certain particulars connected with this part of the subject.

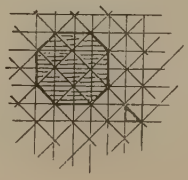
In Chapter II. of "Lessons on Decorative Design" was shown the method of evolving patterns from a basis of crossed lines; and attention was directed to the development of forms for enclosing ornament, to the analysis of those forms, and to the lines involved for the purposes of rearrangement. From this part of our

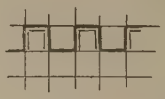
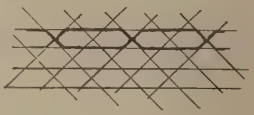
subject we propose to start. The simple forms generated on a network of lines crossing each other at different inclinations may be enumerated as follows: first, those which result from tracing along the lines placed at right angles to one another and at equal distances, the SQUARE and the DIAMOND or LOZENGE, *aa*; secondly, the inclusion of two or more squares of the network, OBLONGS, *bb*; thirdly, figures produced by the use of oblique lines cutting across the squares and oblongs, TRIANGLES.

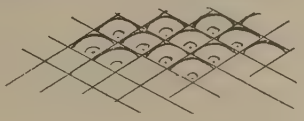
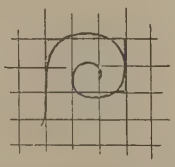
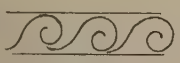
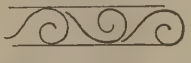
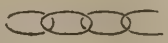




Lines placed at an angle of 30°, and crossed by vertical ones, thus  yield the HEXAGON.

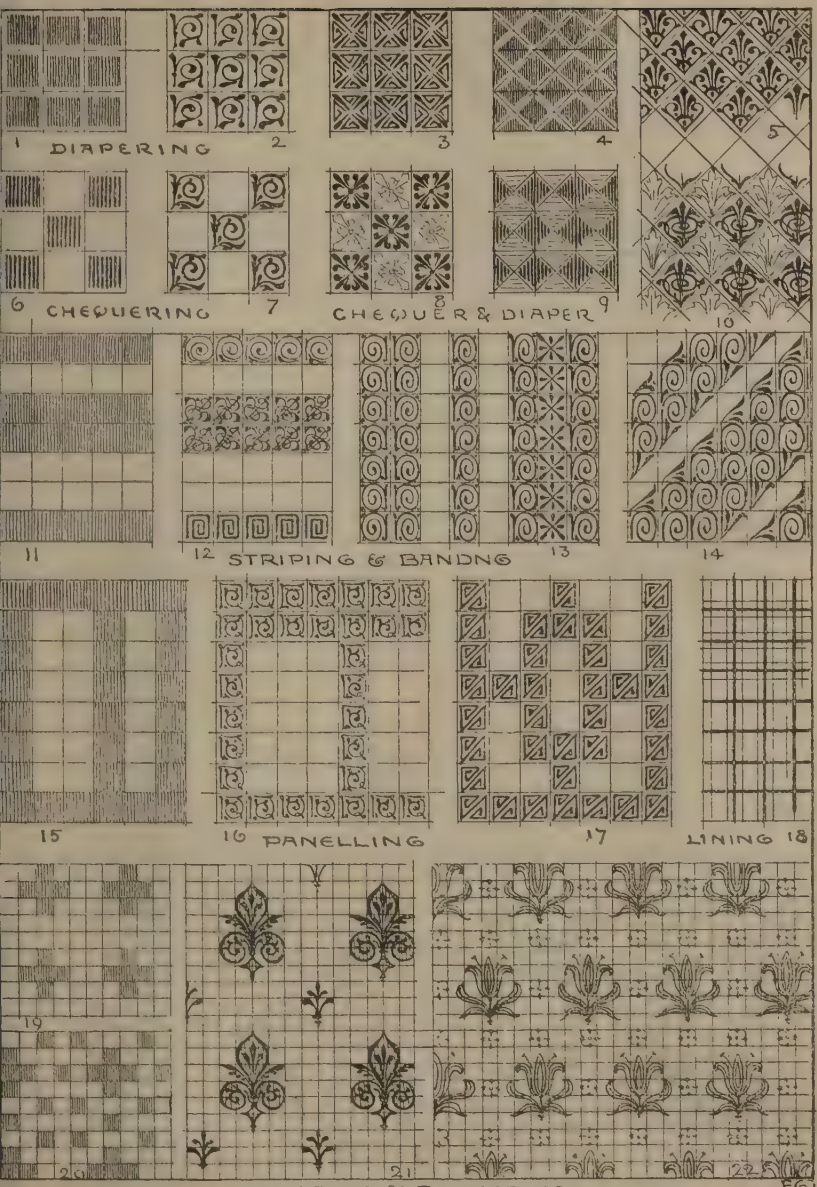
Lines placed at 45°, crossed by vertical and horizontal ones, give the OCTAGON  Next come

certain rectilinear ornamental lines, deducible from the network — such as the EMBATTLED  the CHEVRON or ZIGZAG the BLUNTED ZIGZAG the INTERLACING  and the FRET The softening of the preceding figures and lines gives us a curved series. The octagon becomes a CIRCLE the oblong and some proportions of the lozenge are transformed into ELLIPTICAL SHAPES while the combination of the ellipse and the circle gives the OVAL. The embattled and zigzag are changed into the WAVE MEANDER and SCALLOP

The scallop, placed in series, produces the scale pattern to which the term IMBRICATION  is applied. The fret becomes a SPIRAL  which, according to the method of arrangement, gives the WAVE  or RUNNING SCROLL  The interlacing is altered into a double wave or meander By working upon a basis of circles and ellipses, instead of upon the basis of a rectilinear network, similar results will be obtained; but, in addition, other ornamental elements will be more directly evolved—such as the CHAIN  the CABLE GUILLOCHE etc. Here, then, we have, in brief, most of the elemental forms and lines which are found to be constant in all styles of ornamental art, and upon which elaborate details are supported. Illustrations of this will be found on Plate X. Again, the method adopted for developing lines and forms from a network can also be used to

demonstrate some of the methods of laying out ornament. By simply filling in each square mesh we obtain, by simple repetition, an arrangement known as DIAPERING (*see* Figs. 1, 2, 3, 4, 5, Plate I.). By omitting alternate squares we get CHEQUERING (*see* Figs. 6 and 7); Figs, 8, 9, 10, show the principle of chequering and diapering combined. In allowing larger intervals between the fillings we obtain two further, but similar, modes of arrangement, known as SPOTTING and POWDERING (*see* Figs. 19, 20, 21, 22). If we fill in the spaces in rows, leaving rows of voids, we get STRIPING (Figs. 11, 12, 13, and 14), narrower and broader varieties being distinguished by the terms LINING and BANDING. The character of lining will be better illustrated by simply emphasizing only one set of the cross lines of the network. When this is done in two directions we have the PLAID (Fig. 18). The use of striping and banding leads to another method of laying out, namely, PANELLING (*see* Figs. 15, 16, 17).

We will now detail some of these systems of arranging patterns. *First, the Diaper.* This consists of a repeated pattern, closely fitting and covering a surface without intervals: it is an "all-over" arrangement of formal character; its severer forms consist in the details of the pattern being confined to the allotted spaces, and not overrunning their boundaries. The fundamental


1
DIAPERING
2
3
4
5
6
CHEQUERING
7
8
CHEQUER & DIAPER
9
10
11
12
STRIPING & BANDING
13
14
15
16
PANELLING
17
LINING
18
19
20
21
22
SPOTTING & POWDERING.
F.E.J

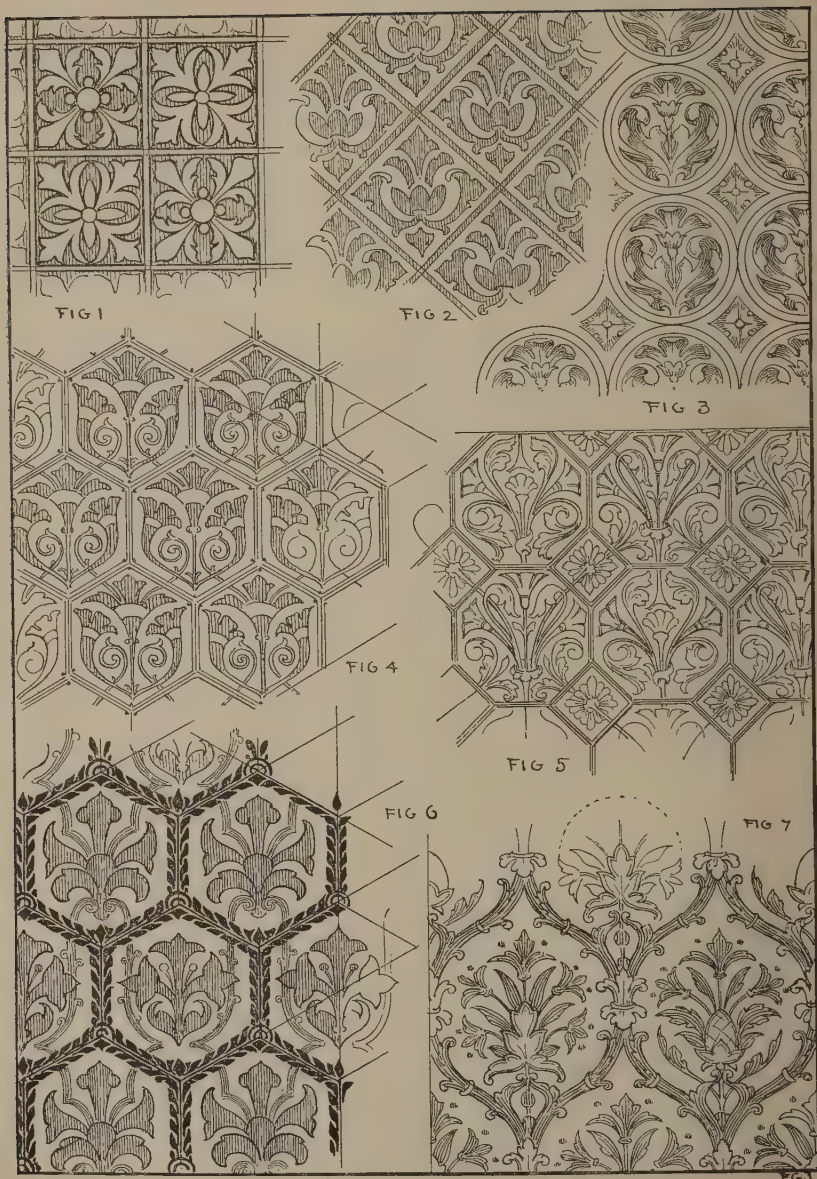


FIG 1
FIG 2
FIG 3
FIG 4
FIG 5
FIG 6
FIG 7

forms may be of any shape, and two alternating forms can be used in the same diaper, but should be as closely fitting as possible (*see* Figs. 1, 2, 3, Plate II.). These may be accented or not, as occasion may require, or may be abolished altogether. In the latter case care should be exercised to keep the pattern compact.

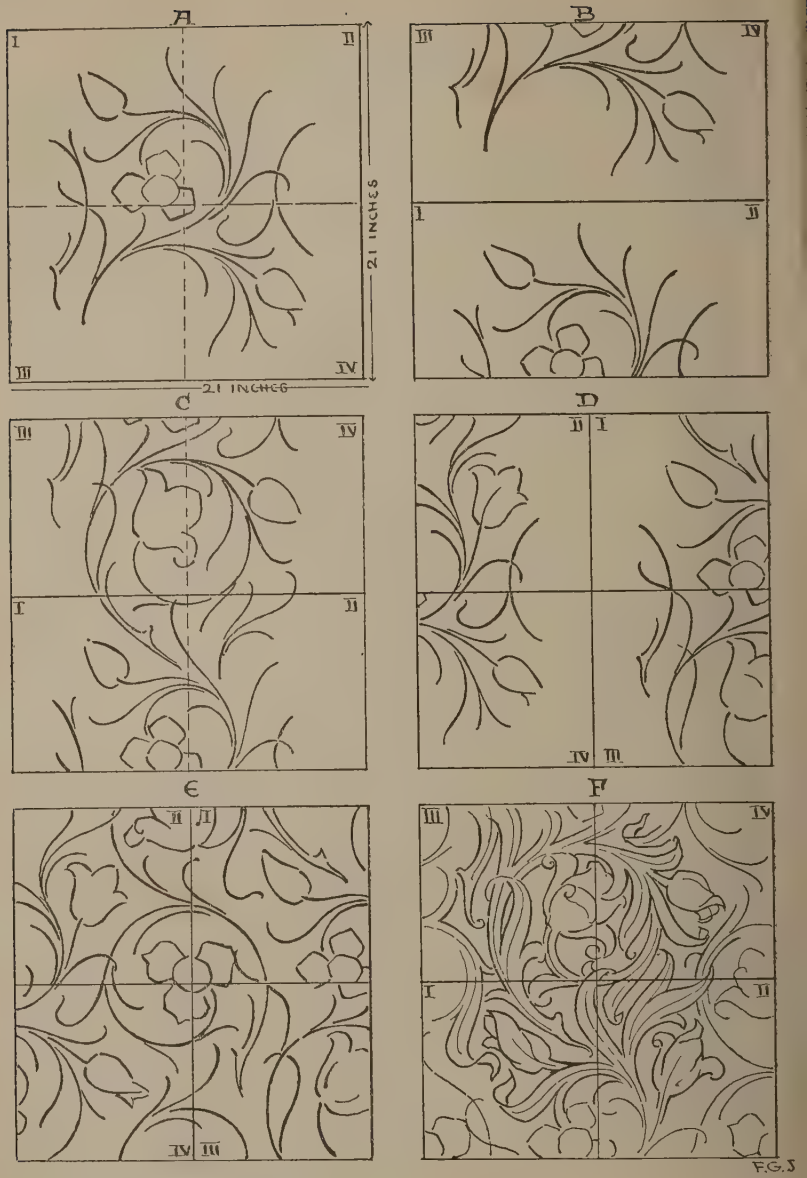
The diaper, like many other ornaments, has been the subject of alteration and development. One of the first modifications of it consists in running out of one space into another the pattern composing it. This departure from the more exact diaper was gradually extended, and ended at last in the development of a kind of pattern known as the "free-all-over." The various changes are as follow: first, the formal diaper consisting of ornaments contained within a rigid geometrical form (Plate II., Figs. 1, 2, 3); secondly, diapers in which the pattern runs out of one figure into another (Figs. 4 and 5); thirdly, when the boundaries of the structural figures are ornamented as well as the enclosed space (Figs. 6 and 7). In other forms of diaper the fundamental forms are placed at intervals, and the pattern runs out of them into the interspaces (Plate III., Fig. 1). When, however, the formal shapes are abolished, we have a type of surface decoration called the "free-all-over," in contradistinction to the formal "all-over" or

strict diaper (Plate III., Figs. 3 and 4). Here it will be well to observe that, although in this kind of pattern work the geometric forms are ultimately eliminated, yet their employment in designing is necessary to proper construction, and is an important aid to accurate repetition.

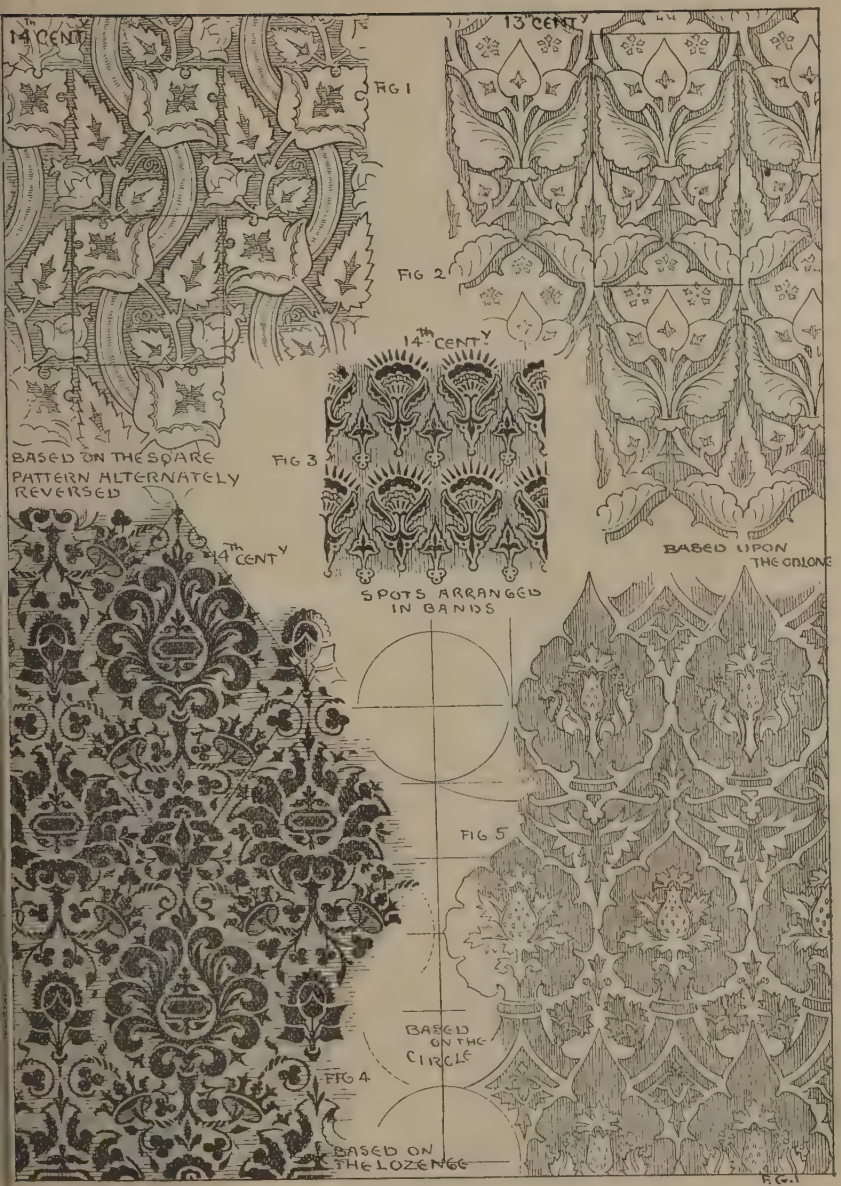
These geometric forms need not, however, control the direction of the lines of the filling, as in cases where the figures are retained, because they will not appear as elements in the completed design. Nevertheless, as has been shown, in the elementary lessons, it is often well to adopt a sympathetic relation of lines to the figures used. On Plate IV. are given historic examples of diapers and their construction. Striping or banding need not be limited to mere lines; what is required for this arrangement is that the "repeat" shall take a horizontal, vertical or oblique direction. The pattern comprising it need not be continuous, it may be interrupted. The intervals, however, should be small, lest the dominant idea of the arrangement should be lost. The main difference between spotting and powdering lies in scale—*i.e.*, in the proportion of ground to pattern. The detail of the spot should be large and important, and have more interest than the unit of the powdering, which should be small and of simple character. Powdering is very often used

FIG 1
FIG 2
FIG 3
FIG 4
F.G.J

PLATE IIIa.



F.G.S


14th CENTY
FIG 1
13th CENTY
FIG 2
14th CENTY
FIG 3
BASED ON THE SQARE
PATTERN ALTERNATELY
REVERSED
14th CENTY
SPOTS ARRANGED
IN BANDS
BASED UPON
THE OBLONG
FIG 5
BASED
ON THE
CIRCLE
FIG 4
BASED ON
THE LOZENGE

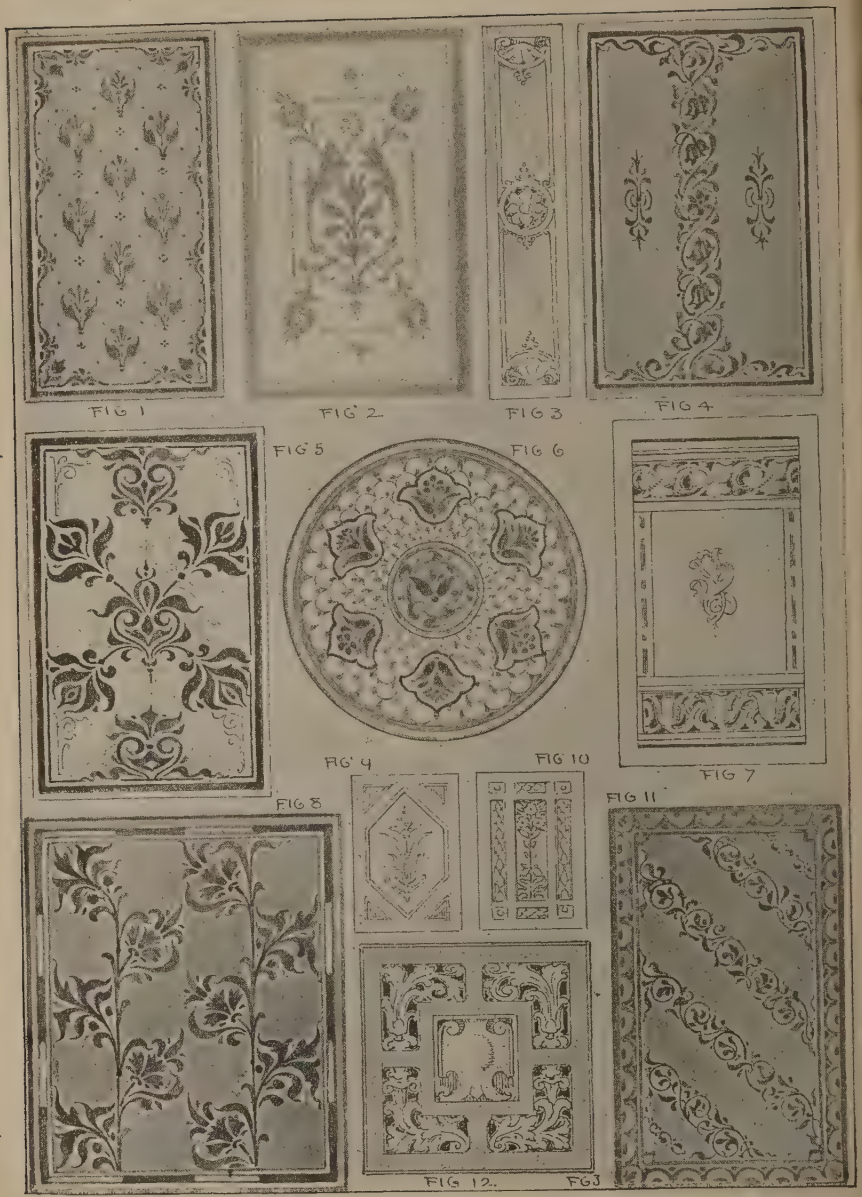


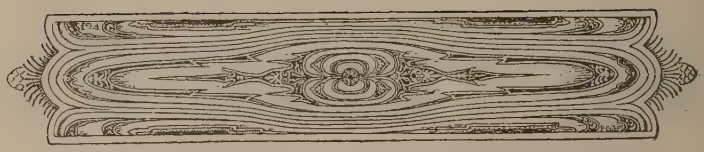
FIG 1
FIG 2
FIG 3
FIG 4
FIG 5
FIG 6
FIG 7
FIG 8
FIG 9
FIG 10
FIG 11
FIG 12.
FIG 13

in conjunction with the spot (as in Plate I., Figs. 21 and 22), where their relative values are illustrated. This background method of using powdering calls to mind other plans often substituted for it, namely, imbrication (seen in Plate V., Fig. 6) and vermiculation. Vermiculation consists of a minute running pattern, sometimes developed into fine scroll work, and is at others brightened by the addition of small spots. Without further extending this part of the subject, it will be obvious that all the methods of arrangement already named are capable of various combinations, and of being used together in one and the same design (*see* Plate V.). Fig. 1 shows the application of "spotting" and "powdering" to a defined space like a panel. It will be seen that the outer spots are united by a line so as to "compose" them with the boundaries. Fig. 2 on Plate V. is an example of decoration by a large central spot; vertical and horizontal lines are included for the purpose of securing unity. Fig. 3 is a long narrow space decorated by three spots united by lines. This treatment is sometimes found on panels of pilasters. In Fig. 4 is given an illustration of the application of the stripe and spot to the decoration of a rectangular figure. The two extremities of the stripe are blended into the border to give completeness to the

pattern and to prevent its appearing as if cut out of a longer piece. In Fig. 7 we have another treatment of the stripe and spot, and in Fig. 11 an arrangement of oblique stripes for the decoration of a panel. Figs. 5 and 8 illustrate the application of the "chequer" to panels of different proportions. In Fig. 5 the chequer is somewhat modified in order to centralise the interest without destroying the essential character of the chequer. Fig. 6 shows a combination of the spot and imbricated ornament within a circle. Figs. 9, 10, and 12 illustrate panelling resulting from striping variously applied and in accordance with the proportion of the spaces decorated. Fig. 9 is from the use of oblique stripes, Fig. 10 is mainly from vertical stripes, while Fig. 12 is formed from vertical and horizontal stripes equally disposed. Examples of decoration by striping and spotting may be seen on many natural objects, such as plants, butterflies, feathers, shells, and in the graining of wood, etc. (*see* Plate XXXVIII. and headpiece to Chapter II., page 22).

In the study of the historic styles of ornament, it will be observed that all these methods, as well as the elementary lines which were engendered in the earliest stages of art, occur again and again throughout all subsequent developments of decoration, whatever the age or country. However dissimilar the styles may

at first sight appear, careful analysis will show that the fundamental lines and principles are the same, and that even modern art, with all its boasted originality, still shapes itself on lines no newer than those of prehistoric times!



CHAPTER II.

APPLICATION OF ORNAMENT.

HAVING in the previous chapter briefly reviewed and classified most of the lines and methods common to ornament, we will now direct the student's attention to some practical applications of them. Suitability or fitness of a method of laying out decoration for any special purpose must first engage his attention. A little consideration will soon convince him that the method of decorating a textile, while being very appropriate for this purpose, may be altogether inappropriate when applied to the surface of a wall. For instance, a wall and a curtain both possess distinct characteristics—the one stiffness and uniform flatness, the other flexibility and unevenness of surface when in use. These qualities

should be taken into account when applying ornament; to decorate both in the same way would be to sin against the natural law of "fitness" and suitability. Hence it must appear that those methods that will accent the qualities of stability and flatness will be the most appropriate for wall decorations; and any method that will accent the quality of flexibility, or emphasize the folds of the material, will be best adapted to the enrichment of curtains. As a general rule, therefore, in patterns for walls no particular direction should be expressed—*i.e.*, such patterns should not exhibit any tendency to develop horizontal, vertical, or oblique stripes, and hence the methods of decoration will comprise diapering, powdering, "free-all-overing," and panelling. While modifications of some of these are allowable for curtains, patterns having certain decided directions, such as may be included under the heads of horizontal and oblique striping, are more distinctly suitable.

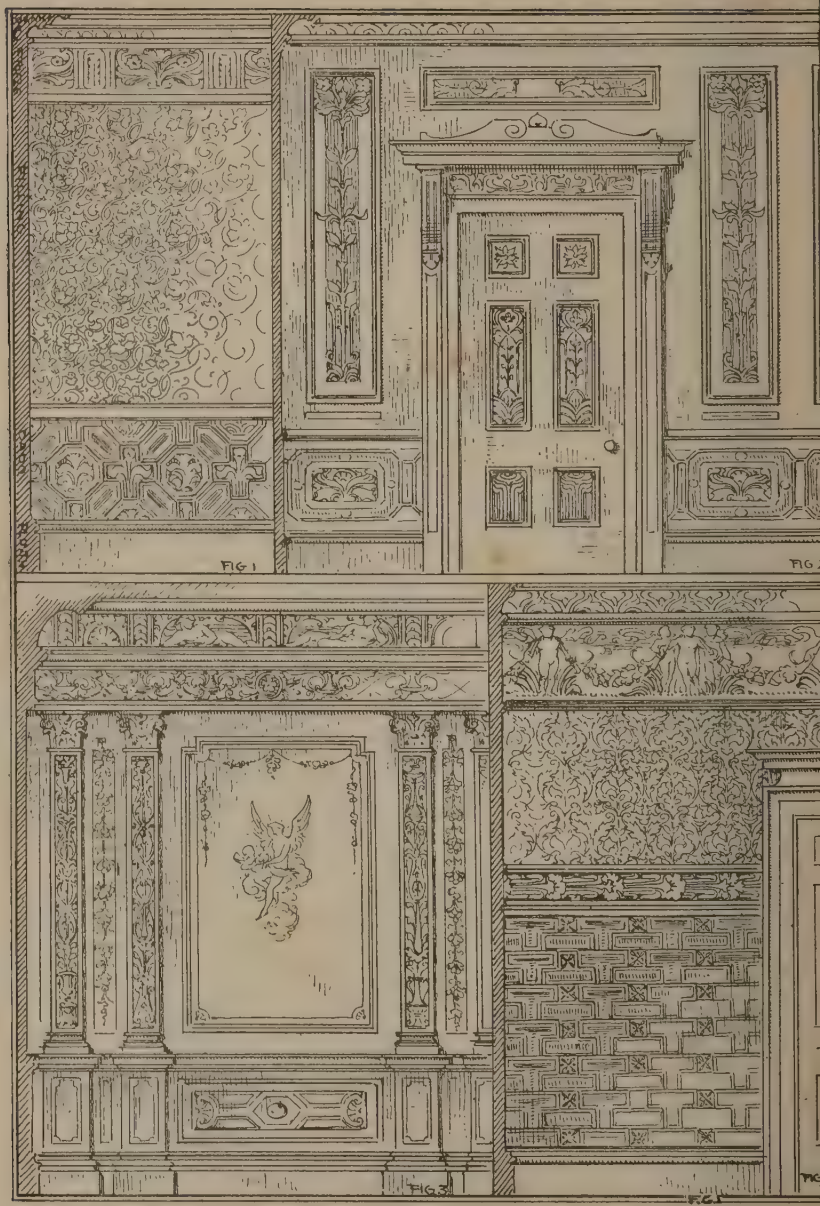
These kinds of patterns, by crossing the folds of the material, bring out, so to speak, the modelling of the surface, developing curves of exceeding beauty, such as were not preconceived by the designer (*see* Plate VI.). Vertical stripe patterns are less suitable, as their application tends to confuse, instead of emphasizing, the folds (*see* Plate VI., *a*, Fig. 4). Again, the scale of the

ornament used is an important matter. The patterns should be designed for and adjusted to the size of the folds into which the material naturally falls.

As the large folds of heavy textiles require bold patterns, and the narrow folds of lighter ones smaller details, the question becomes one of the right proportioning of ornament to surface; and this principle admits of a wide application to all kinds of surface decoration. For instance, in the case of wall decoration, presently to be considered, the surfaces of important rooms should have patterns comprising large masses, while the ornament of small rooms should be less in scale. Besides the scale of patterns, there is order of distribution to be observed; for, as soon as we begin to divide a surface into distinct compartments, with the object of giving additional interest to any scheme of decoration, we have to consider the nature and relative value of each part, and to apply the decoration consistently therewith. For example, it is usual to divide the wall of a room into plinth, dado, wall-vail, frieze, and cornice, with intervening mouldings and borders (*see* Plate VII., Fig. 1). This arrangement of parts suggests different structural values; and their relations to one another require due recognition when distributing the various classes of ornament at our command. The parts having the greatest structural value should receive the most severe

FIG 2
FIG 4
a
FIG 3

PLATE VII.



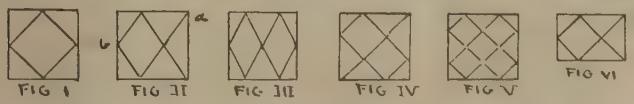
and formal ornamentation; while those that are of the least structural importance the freest and most picturesque. The dado being the support of the wall is, from an architectural point of view, the most essential, and, therefore, to it should be apportioned the severest decoration. To the upper portion a freer and less rigid pattern may be given. Sometimes to the above horizontal divisions are added vertical ones—such as pilasters, etc. (*see* Plate VII., Fig. 3). When these are added the wall-vail loses its uniform value; the spaces between the upright members become less essential than before, and may therefore with propriety be decorated with ornamentation more or less inclining to the pictorial; while the structural uprights and pilasters should be more stiffly treated. Some people may object to this assumption of a possible construction, other than the actual one, in laying out the wall space; but as long as divisions are required in order to avoid monotony, no better method can be devised than that of adopting the lines of some structural arrangement suitable to the case; and certainly this method is in harmony with the principle of constructive order, which is the foundation of decorative art.

Here it will be well to call attention to the effect that these methods of wall divisions have upon the appearance of rooms. While the use of horizontal divisions imparts

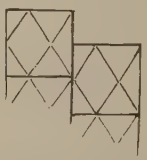
a sense of cosiness to an apartment, they also tend to reduce the apparent height of it, and if the upper and lower divisions are developed at the expense of the intermediate one, as in Fig. 4, this effect is still more marked. Vertical divisions by upright panelling, as in Fig. 2, give the appearance of increased height, and this effect is further accented in Fig. 3 by the use of pilasters.

In practical pattern making, suitable to the paper-stainer, weaver, textile printer, and ornamental tile-makers, there are technical matters peculiar to each industry, and which have to be considered, in addition to the mere laying out of the ornament; and the conditions attached to each must be well understood if the artistic element is to be practically expressed. While within the limits of the present work it will be impossible to treat of all the varied requirements which have arisen with the development of the several trades, it will be well to take one of them as a sample to illustrate the limitations of the designer's work. Take wall-paper, for example. In this country wall-paper is generally made 1 ft. 10 in. wide, and in runs of twelve yards. It is usually printed from blocks having raised patterns upon them 1 ft. 9 in. in width; the depth is determined by circumstances—sometimes it is less than the width, rarely greater; but a square block is found to be the most

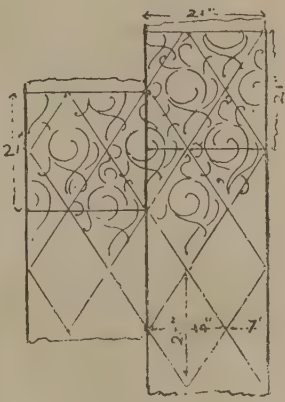
convenient. The block may contain one or more "repeats," or even a section of a repeat, according to the scale of pattern required. The extension of the repeats in a vertical direction is obtained by successive printings of the block; the lateral extension by the paper-hanger when he places the lengths of paper side by side. The necessary dimensions of the block will, therefore, control to a great extent the size and proportion of the pattern; whether it takes several repeats, or a portion of one, the pattern must be so adjusted as to ensure accurate repetition in the two directions. For instance, suppose we adopt a diamond form as the basis of a



repeat (as in Fig. I.): finding, however, that the use of one only will yield a pattern too large in scale, we put in one and a half (as in Fig. II.); but this, while it affects the scale, also alters the proportion of the fundamental figure. Arrange two within the same space, and the difference between the height and width of the figures is increased (Fig. III.). If it is desirable that the proportion of the example in Fig. I. be kept, then we shall have either to shorten the block (as in Fig. VI.), or to adopt the arrangement (as in Fig. V.) which gives smaller repeats. Here, then, it will be seen that in

adopting any form whereon to construct the repeat, to a block of a given size, any variation of the number apportioned to it will lead to alteration in proportion or to reduction in scale. If the size of the pattern indicated by Fig. II. be satisfactory, and if the alteration in the proportion be immaterial, it will be found that the mode of lateral repetition differs from that applicable to I., III., and V.—*i.e.*, it will not repeat by being placed side by side on the same level ; and, therefore, the lateral repetition will have to be effected by lowering the pattern when fitting two sections together, thus :  . Patterns arranged for this way of hanging are technically known as "Drop patterns," because the decorator has to "drop" the paper when pasting it on the wall. The chief object served in adopting the "drop" principle is the avoidance of too small a scale of pattern ; this will be seen in the diagrams. The largest possible scale next to Fig. I. is Fig. II. Fig. IV., although it would repeat laterally by dropping, would not repeat in a vertical direction, and so would be unworkable.

The construction of wall-paper patterns on a basis of geometrical figures, such as are here given with a diagram of repeats,



is not the only method used by designers. Some adopt the plan of cutting into equal sections the paper on which the drawing is made, and transposing the pieces during the progress of the design. The former method is most generally employed; but answers better for patterns which are of a formal

character. The latter method, however, is undoubtedly the more suitable for designs of a freer treatment, such as the example (Plate III., Fig. 2). By this method the artist can work with greater freedom, and at the same time secure with but little trouble accuracy in his repeats. Plate IIIA. explains the working of this method. The initial portion of the design is drawn in the centre of the paper, or cardboard, 21 in. by 21 in. (*see* A, the corners of which are marked $\frac{\text{I.}}{\text{III.}}$ $\frac{\text{II.}}{\text{IV.}}$); this is then cut exactly into halves, and then reversed (as at B), the figures reading $\frac{\text{III.}}{\text{I.}}$ $\frac{\text{IV.}}{\text{II.}}$ The space between the upper and lower parts of the pattern is now to be filled in (as at C). The card or paper is then to be cut down vertically, dividing it into four equal sections, and then transposed (as at D), figures standing $\frac{\text{II.}}{\text{IV.}}$ $\frac{\text{I.}}{\text{III.}}$ This, again, leaves a central space, which has to be filled (as at E), and which will complete the main lines of the design. F shows another disposition of the pieces to further test repeats. The transposition and re-transposition of the parts of the pattern will be necessary when adding details or making alterations near to the edges of them.

As regards the colouring of wall-papers, the number of colours to be used should be regulated by the scale of the pattern. If the pattern be small, several colours may be employed, inasmuch as the smallness of the details and the number of the masses composing it

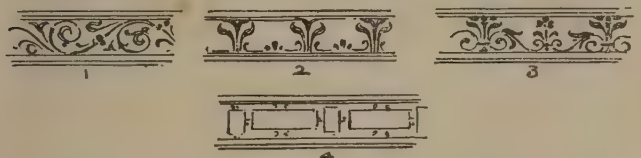
will cause the colours to be so interwoven and distributed that there will be no interference with the repose which should characterise a wall covering, whose subordinate office is always to serve as a background to the general appointments of a room. If, however, the pattern be large, it will be well to have either fewer colours and reduced in hue, or, better still, to limit the colouring to two or three tones of one colour. It may be possible to successfully employ several colours in large patterns, by either reducing the hue or distributing the colour in lines and among the smallest details ; but, however this result may be achieved, it will be in obedience to the general principle that no large masses of different colours should be used. Now as to the character of patterns suitable for printed wall-papers. The natural law of fitness again comes to our aid. The process of printing, by which paper-hangings are produced, has to do with repetition, and not with growth, or development, neither of which it can truly represent. Growth is concerned for the most part with variety, as repetition is greatly modified by it. If this is so, patterns which are obviously made up of repeats of a conventional type are best adapted to block printing. Patterns having the appearance of natural growth are ill adapted to the process ; because, in printing, the identical masses and lines must occur again and again throughout the decorated space ;

and variety, an attribute of natural growth, is thus ignored. For, although it is true that a plant develops similar flowers and masses of leaves throughout its entire growth, yet these are modified by variety, and the stems vary in thickness and direction. A process like the one in question is not fitted to render these characteristics. They are only to be expressed by some process favouring the principle of variety. In hand painting we find the most suitable method, for the obvious reason that by hand work variety is more easily expressed than exact repetition. Hence the observance of fitness of methods to the realisation of results will justify us in formulating the rule, *that conventional patterns are best suited to the mechanically repeating process of printing, and naturalistic ones to the freer method of execution by painting.* By using conventional patterns for wall-papers, there need be no offence against the law of fitness; but by adopting naturalistic ones there is danger of great offence. One of the reasons why these latter patterns are so popular is that the majority of people, and many who call themselves lovers of nature, only extend their admiration to the flowers and leaves of a plant, often to the former only, and never turn their attention to the equally beautiful growths with their ever-varying lines and exquisite gradations. If these matters received the attention they deserve,

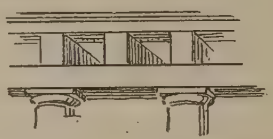
"pretty floral" papers, with monstrous growths, would not be tolerated, and would soon be discarded as violations of nature and as sins against the natural and eternal law of fitness.

We have now to consider the treatment of the frieze, or chief upper division, which decoratively bears about the same relation to the wall as the capital does to a column; and just as the capital is more pronounced than the shaft of the column, so the frieze should have more distinct emphasis than the wall. Its decoration should possess more interest, not only for the sake of contrast with the lower space, but because from its position it is not likely to be interfered with by the furniture of the room. Its position requires, also, that the decoration should be simple and free from complex motives, so as to be easily read.

This long horizontal division may be dealt with in four different ways: (1) by filling in a continuous



running pattern, or (2) by a series of vertical ornaments; or (3) by a union of alternate vertical and horizontal details, or (4) by an arrangement of panels. The first

method is the least satisfactory and likely to produce a weak effect; the second is better, but still defective, as the arrangement of the parts is unnecessarily stiff and monotonous, and does not sufficiently harmonise with the long lines of the enclosed space. The third treatment is, perhaps, best for general purposes, because, while it combines the freedom and playfulness of the first and the firmness of the second, it ensures the harmonic relation that should exist between the boundaries of the space and the filling. Again, the third and fourth treatments are in sympathy with the principle of construction, as seen in the arrangement of the timbers above the architrave in Grecian architecture (thus, ), and give solid uprights and interspaces to be afterwards filled in. Taking this structural arrangement as the basis for decoration, it is evident that the use of vertical stops with lateral developments of ornamentation is desirable, because the treatment most in accordance with construction offers the best way of securing the fittest results.

Whether we lay out our frieze by simple stops (as in No. 2), or by an arrangement of panels (as

in No. 4), it is open to us to accent more or less the structural lines. The degree to which this may be done will depend on the general scheme of decoration adopted ; if it be severe and dignified, then the structural divisions should be pronounced ; but if light and fanciful, then they may be treated less vigorously. Some historic examples of friezes will be found on Plate VIII., Figs. 1, 2, 3, 4. Borders, again, which are used to separate the frieze and dado from the "filling," and for other purposes, such as panels, should be treated according to their importance The primary office of borders is to prevent the patterns of contiguous surfaces from impinging one upon another. For this reason, if a border is rich in character, it also requires bordering with plain lines on each side, in order to prevent its mingling with the patterns which it is intended to separate. That the separation may be made distinct between the decorated spaces, it often is desirable for the pattern of the border to contrast in form, tone, and colour with the pattern on either side of it—*i.e.*, if vertical lines predominate in the surroundings, the border should be arranged on horizontal lines, and *vice versâ* ; and so on in the matters of tone and colour. Another use of the border, especially in the case of panels, is to confine attention to the subject or design enclosed, in order to prevent its having the appearance of overrunning its proper limits, and be-

coming confused with surrounding objects. In the case of pictures, the application of the border or frame for this purpose is well understood. At times, however, some painters indulge in the novelty of extending on to the frame the interest of the picture; but the practice carries its own condemnation, and may, therefore, be regarded as a freak of fashion, rather than as indicating any enduring and guiding principle. Again, in ornamental compositions, the border will be found of great service in "tidying up," so to speak, any irregular decoration, and in rendering compact what without it would be loose and untidy. Take any piece of freely drawn ornament, and surround it with a border composed even only of straight lines, and the effect will be as evident as that exerted by a frame on a picture. The character of a border should be in proportion to the interest of the subject enclosed. If the enclosed space contains a design of little interest, then the border may possess attractive features; if, on the contrary, it is occupied with a subject of great interest, then a border of a more conventional or commonplace type will be appropriate.

From an artistic point of view, the border of a written or printed page may be richer and even more naturalistic in its treatment than the border of a picture. The first encloses conventional forms less interesting in appearance than those contained in the latter. Borders are also

FIG 1

FIG 2

FIG 3

FIG 4

FIG 5

FIG 6

FIG 7

FIG 8

FIG 9

used not only to define spaces, but to emphasize construction—as on the edges of plates, and bands on vases, etc. Determining the scale of interest that a border should possess in relation to its enclosure, and giving right proportion and value, require artistic judgment and careful consideration; for many a design is found to be incomplete for want of due attention to its framing. The ineffectiveness of the whole design often arises from the inappropriateness, the bad proportion, or the want of weight in the border.

We may here observe that, though for economic reasons borders for wall-paper decoration are made straight, it is not essential that they should always be so; for other purposes and for other modes of production they can take various forms. There is no reason why the boundaries of borders should be parallel, any more than that the enclosed spaces, with which they are associated, should be rectangular in shape. A border may surround any irregularly shaped space, and, while its inner margin is identical therewith, its outer edge may be rectangular (*see* Plate IX., Fig. 4); or if one encloses a rectangular form, although its inner margin coincides with the edge of the space, its outer one may present a complex and irregular outline. Then, again, the pattern of a border need not be continuous throughout, but may be interrupted; and for that

purpose a construction may be assumed, and various degrees of interest apportioned to the parts. When the subject of the decorated space does not allow of sufficient margin for a proportionate border, a useful method of meeting the difficulty is to draw lines parallel to the edge within the filling (*see* Plate IX., Fig. 5). This method of supplying the want of a proper border should be used sparingly, and only employed when some other reason exists to warrant its adoption than the baneful one of novelty; otherwise its frequent use may lead to irregular and disorderly composition. Not that irregularity is always to be avoided; on the contrary, a little may sometimes add piquancy to a design, but this should not be too freely indulged in: it should be used as we use condiments with our food—namely, as a stimulant. A too liberal supply tends to vitiate the taste; and as a well-ordered diet and a healthy constitution require but little of these additions, so also irregularity should be but little in request in good ornamental composition.

This mode of making up for the want of sufficient border must not be confused with another expedient which is often adopted as a matter of composition of line: for instance, when the filling is of a free kind, and contains more curves than is compatible with fitness to space, the introduction of right lines by panelling

part of the field will, while correcting the monotony of the pattern, bring the whole composition into harmony (*see* Figs. A and B). The results are somewhat similar, although proceeding from different causes.

A B

On Plates IX. and X. are given examples of panels with the application of borders. In Plate IX., Fig. 1, it will be seen that a broad line of similar tone to the pattern of the centre gives balance and produces unity of effect, while Fig. 2 is wanting in this respect. Compare, also, the relative values of the borders to the enclosed pattern, in Fig. 3; here the right-hand border is insufficient. It is too meagre, and wants weight. The left-hand border is more satisfactory, both as to weight and quantity. Fig. 4 is an example of a border whose inner edge follows the shape of a panel, of which the outline is not rectangular. The continuity of the border is in contrast with the spot treatment of the panel. This, though small in quantity as compared with the mass of the border, is compensated for by adopting more interesting material for its composition. The border is subordinated to it by being more commonplace. Turning to Plate X., Fig. 1, we have an example of the wrong and right application

FIG 1

FIG 2

FIG 3

FIG 4

FIG 5

FIG 6

FIG 7

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PLATE X.

FIG. 1

B

A

FIG 2.

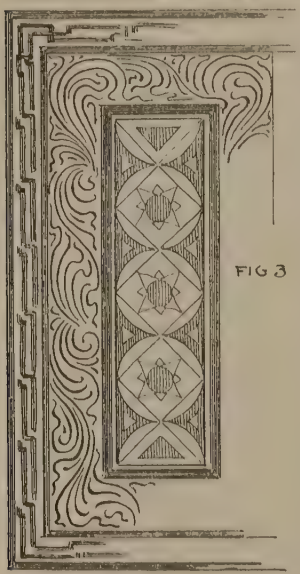


FIG 3

FIG 4

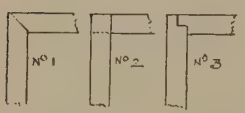
FIG

of the border. The ornamental border A is composed of details having the same amount of interest as in the filling of the panel; consequently, the attention is divided between both. Besides, the want of a broader separation between the two patterns makes them appear to run together, and the confusion is thus increased that resulted from using such similar material in both border and panel. In the border B, while we still have foliated ornament, it is reduced in quality, and rendered more formal. The slight similarity between the material of the border and that of the panel is adopted for the purpose of securing unity in the whole composition; while the difference of treatment is employed to concentrate or localise interest.

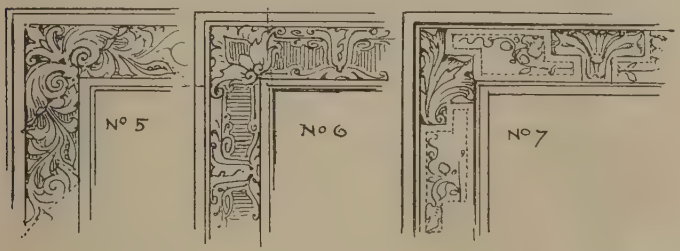
In Fig. 2 the panel is occupied with a figure composition; the border is composed of elements of a lower grade conventionally treated, and is in point of interest subordinated to the centre, while it harmonises with the foliage which is accessory to the group of figures. In Fig. 3 we start with, perhaps, the least interesting ornamental elements—namely, geometrical forms—for the panel. In order to give interest, and to maintain unity in the design, we adopt, for the contiguous border, curved lines, which are higher in the class of abstract elements, as those lines possess more interest than right lines. The centre filling will be subordinate

thereto. In order to further accent unity of effect, and to give firmness to the design, there is added an outer border of elements, similar as regards their rectilinear character. In the panel (Fig. 4) we have a conventional rendering of the spring buds of the sycamore. To confine the interest and to direct the attention to the central subject, a border of geometrical character is attached; in it are included some severe forms of leaves, in order to correct any excessive contrast that might arise from the employment of geometrical lines alone, and to bring it into unity with the centre by echoing in a slight degree the same class of elements.

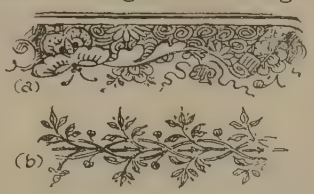
In setting out ornamental borders that entirely surround panels, it will be found advisable to consider the structure of frames—*i.e.*, of the joining and mitring of the parts composing them. Frames are formed in several ways, by an oblique (1), square (2), or joggled (3) mitre, each of which methods of joining may form the basis of patterns. The object of regarding construction is to enable one to provide decoration that shall harmonise with it; neither accenting nor concealing it. The joint is apparently the weakest part of the structure; therefore, any ornament added should appear to strengthen



this part of the frame. For this reason, it is advisable to attack the corner first, and to apply ornament in such a way that it will look as though it grasped and held together the vertical and horizontal pieces (*see* 5, 6, and 7). This being done, the rest of the decoration

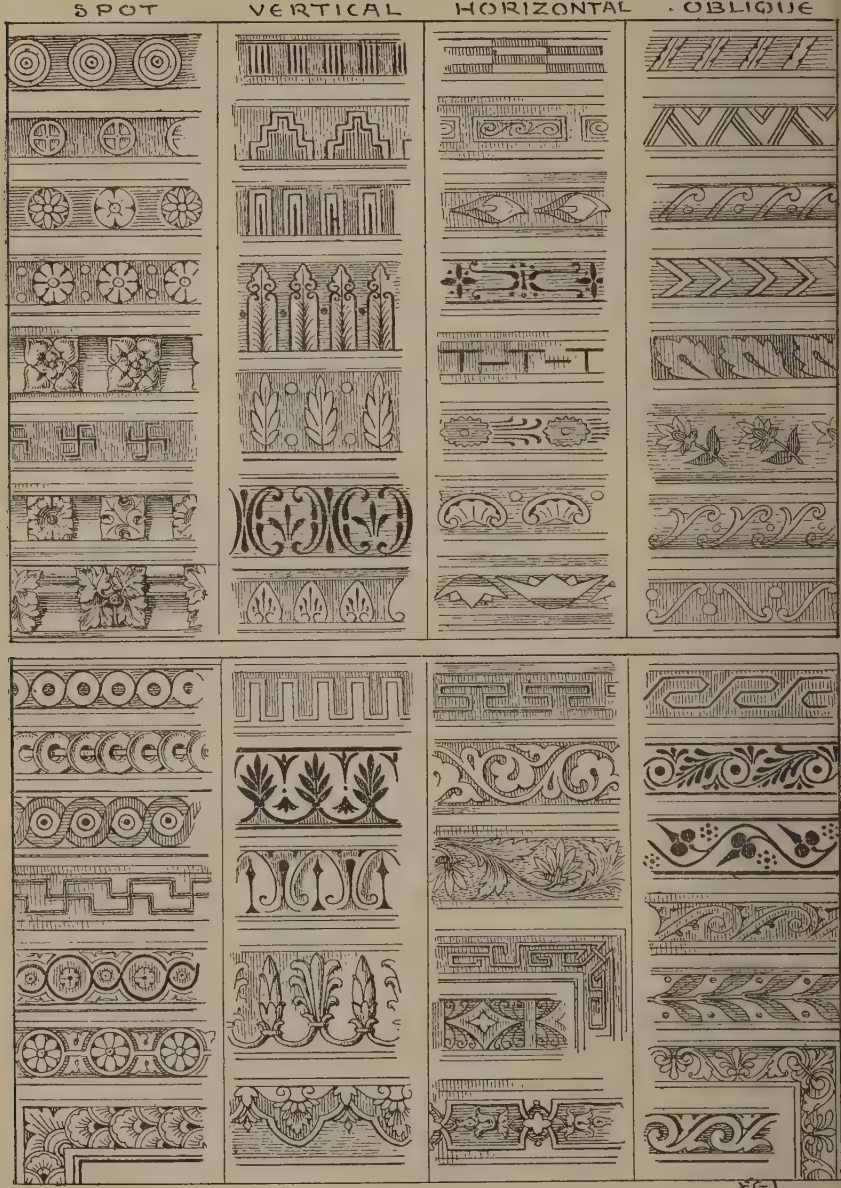


may be more freely treated on the same lines, which may be simply repeated or reversed as the case may require, and with large and small intervals according to the necessities of scale and proportion. Besides borders which surround spaces having bound edges, there are others which are not so restricted, such as are seen on the edges of china plates, and used as stripes on draperies, laces, etc. Of these there are two kinds, (*a*) those having one bound and one free edge, (*b*) those in which both edges have free terminations.



Ornamental borders may be broadly divided into two

PLATE XI.



classes—the interrupted and the continuous; these are subdivided according to particular methods of laying out, as the spot, vertical, horizontal, and oblique treatment (*see* Plate XI.). Additional varieties are formed by combining the above methods; the upright and horizontal, the horizontal and oblique, and so on. Some of the lines for laying out borders are, it will be seen, similar to those used for friezes; but the application of them must be regulated by the less important function exercised by a border. The somewhat severe treatment required for a frieze may be relaxed in the case of a border; the regular outline of the one may be, as already explained, departed from in the other.

Besides horizontal borders, there are vertical ones. Under this head may be included pilasters and other upright divisions of surface. Vertical borders are for the most part identical with horizontal ones; the same lines can often be used in both. Decorated pilasters and narrow panels, resulting from their use, are not, strictly speaking, borders; notwithstanding that we shall consider them under this head, and that their proportion gives them somewhat that character. There is just this difference between the two; a border consists of a regular repetition of parts, and may be extended without alteration of pattern. The ornament on a pilaster is not so arranged; there is less repetition; the parts are dis-

posed evenly but not equally. The proportion and extent of the panel being determined at the outset, the limit of the pattern is thus fixed, and the pattern becomes a complete organic whole. While many of the lines used for horizontal and other borders are, and have been, used for the decoration of pilasters, subject to certain modifications arising from the needs of adaptation, there are four systems which appear to have been more generally adopted; namely, (1) when the elements of the design are built up in stages and symmetrically disposed around a central stalk; (2) when they are tied together in bunches and suspended by a cord or ribbon; (3) when arranged upon a succession of spirals; and (4) when based upon "wave" lines crossing and recrossing a central stem. These arrangements are more or less satisfactory; and a moment's reflection will enable us to determine their relative and artistic values. The law of suitability requires that the use to which an object is put should be taken into account when applying ornament to it. The office of pilasters is to strengthen masses or support weights; therefore, any decoration applied to them should harmonise with these functions. It will at once be seen that the leading lines upon which

2 and 3 are constructed render them less suited to the decoration of a support than Nos. 1 and 4. Again, No. 1, being decidedly structural in arrangement, will require a conventional treatment of the details. In setting out a design for a pilaster on this principle, care must be taken to have the axis strong; and for this purpose architectural elements are admirably suited. Horizontal lines should be so disposed at intervals as to harmonise with the short boundaries of the space, to serve as start-points and as ties, and to further emphasize the quality of strength, which a composition of this kind should possess. The foliage that may be used to decorate these main structural lines should be firm and should have a certain rigidity of character. The secondary structural lines should be firm and graceful. They should compose well with the boundaries and with one another, but may carry foliage less severe in character; the smaller filling, having nothing to do with the construction, can be free and playful, and even naturalistic elements may be introduced into the still less essential parts. By observing some such rule as is here indicated for the distribution of the different qualities of ornament, we are enabled to import into our work, by an orderly method, variety of treatment and, therefore, interest. Again, the proportion of the panel of the pilaster should be regarded in the spacing out of the ornaments; tall

divisions should prevail, as in Fig. A. In Fig. B the divisions are decidedly inharmonious. A tall starting-point is essential as the key-note of the composition (*see* Plate VIII., Figs. 5, 6, 7, 8, and 9).

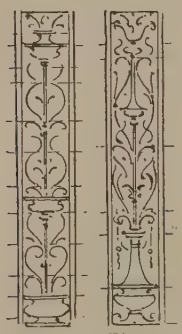
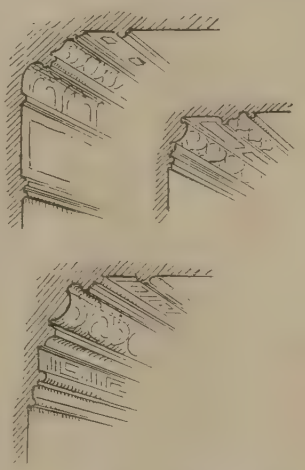


Fig. B. Fig. A.

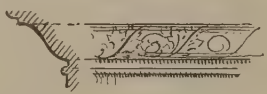
The second method, in which the materials of the design are suspended, is less structural, and consequently demands a less symmetrical treatment. The masses will be proportionally larger; and there will be less variety in the lines on which the details are arranged. The distribution of the elements of a design on either plan will be similar—*i.e.*, whatever element is used at the start, should be repeated, in some degree, throughout the composition and at the extremity. If taking the first plan we start at the base with a vase or other architectural member, other details of a like character should be repeated in the process of building up; and a cup or tazza will fitly crown the whole; the same rule applies to vegetable, animal, and human forms. This rule also applies to tone and colour. The long, narrow panels occurring between pilasters may be treated in a freer manner, as they have a less structural value*;

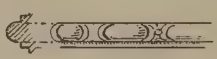
* For this reason, the hanging arrangement (No. 2) is more suitable for spaces between pilasters than for the pilasters themselves.

their ornamentation may incline towards the pictorial, and, if in relief, should in parts melt into the background; while the caved ornament of a pilaster should be clearly and sharply defined on a firm and even ground. The different uses of pilasters give them varying structural values, the general decoration of which will be modified accordingly. The severity necessary to a pilaster which has to carry actual weight may be judiciously relaxed in the case of one which is used either as an ornamental adjunct or for the mere division of a surface. Take, for instance, the pilaster of a doorway and that of a casket. The cornice is the crowning member of the wall, and, in its relation to the frieze, may be regarded as a development of a moulded abacus; it corbels out from the line of the wall on to the horizontal surface of the ceiling, with which it should compose. Generally, it is made up of a suite of contrasted mouldings—flat, concave, convex, and ogee—and is usually treated as a mass; its decoration is subordinated to that of the frieze. Bearing in mind the position and office of the cornice, as a whole, individual



mouldings may be relieved by raised or painted decoration ; and, for this purpose, some of the lines in the borders already given will be found suitable. But regard should be paid to the principle upon which the selection is to be made. This principle applies to all decorated mouldings for whatever purpose they may be used. As a rule, the *leading lines* of the ornament should in a measure *repeat the profile of the moulding* to be decorated, so as to ensure harmony between the decoration and the object to which it is applied. If the profile is concave in form, then patterns based simply on these lines, or reversed, as will be appropriate. If the moulding has an ogee outline, then the pattern may be set out thus :



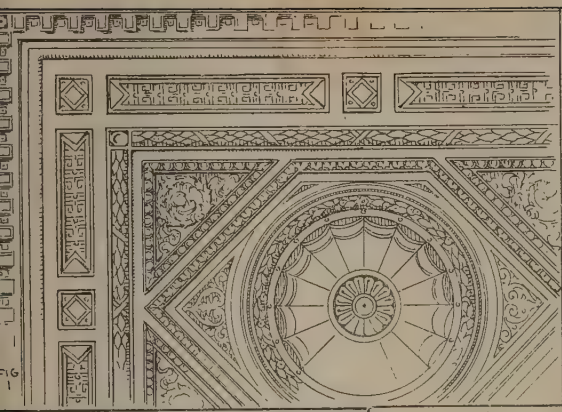
or, if convex, so :  if flat, straight-lined patterns will be applicable, and so on.

While the profiles may generally be the guide in apportioning suitable patterns, it does not follow that the profile or simple vertical section need in all cases determine the choice of lines to be employed ; for circumstances may arise when for variety's sake other lines may be necessary to the general effect of the group

of mouldings forming the cornice. Transverse and oblique sections will be found to yield lines differing from those of the profiles; and, though at first sight they may appear to controvert the general principle laid down, their use will result in a real though subtle harmony.

We now come to the consideration of the horizontal surfaces of a room—namely, the ceiling and floor. First, the ceiling: this is generally the least decorated part of a room. Why it is so it is hard to understand, for economic reasons do not explain it. The traditional white ceiling has a cold, cheerless, and unfinished look, which is often intensified by the rich covering of the walls. Too often the only relief accorded to the cheerless space is the addition of some cheap centre ornament, from which depends the gasalier. Of all surfaces in a room the ceiling is the one which offers to the decorator the best chance to display his art; for here his whole scheme can be seen without any interruption whatever. In decorating a ceiling, it should be remembered that it is a source of reflected light, and, therefore, that it should be treated in a lighter and more airy manner than the walls, particularly if the ceiling be low, for heavy decorations would have a depressing effect and lessen its reflective power. A loftier ceiling may have stronger tones and more power-

ful ornament, but still be less pronounced, as a whole, than the vertical surfaces. The ceiling should to some extent echo the colour treatment of the cornice and frieze in order to preserve a general harmony or unity in the whole decoration of the apartment. The laying-out may be, in a simple scheme, limited to borders with corner ornaments, or may in a richer scheme be arranged on some structural lines covering the whole surface, and, as a rule, the whole ornamentation should be definite and approach the commonplace. On Plate XII. are given a few examples showing some of the methods used in decorating flat ceilings. Fig. 1 is a structural arrangement resulting in panels of unequal sizes and shapes, and filled in with ornaments; the several parts are treated according to their "values." This example is in the French manner which prevailed in the latter part of the eighteenth century. Fig. 2 is an "all-over" treatment, consisting of panels, of certain sizes and shapes, repeated over the entire surface, and containing conventional ornaments. In Fig. 3 is given a Jacobean example of raised tracery relieved with "spot" patterns. Fig. 4 is a design for a printed ceiling-paper, arranged on a multi-symmetrical basis; Fig. 5 shows an arrangement for decoration by means of stencilling and painting; while Fig. 6 shows a method of dealing with the surface of a ceiling whereof one side is



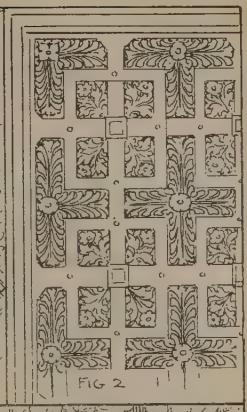


FIG 2

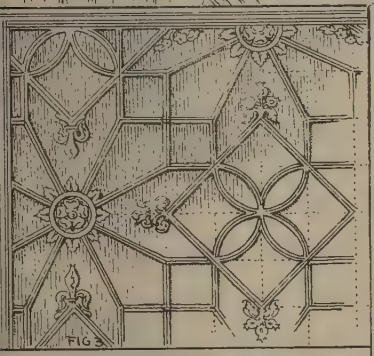


FIG 3

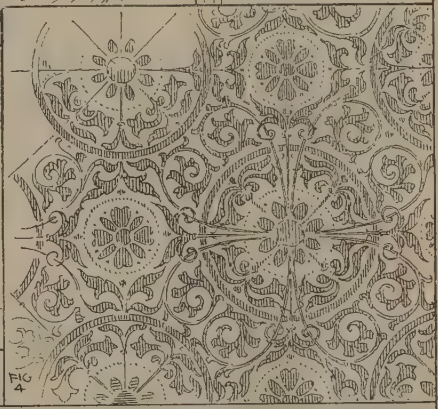
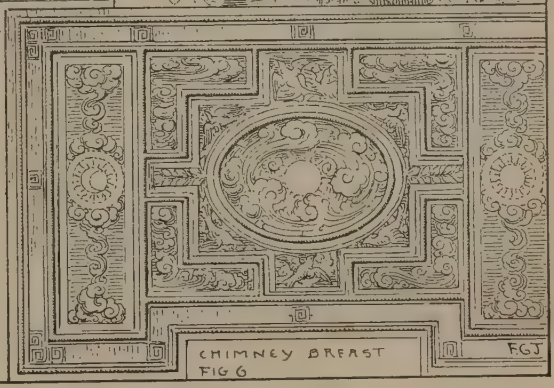


FIG 4

FIG 5


CHIMNEY BREAST
FIG 6
FGJ

broken up by the projection of the chimney breast. In laying-out a ceiling as in Figs. 1, 5, and 6, the proportion of the space should be considered, and the leading division, at least, should agree with it—*i.e.*, a similar proportion should be repeated for the sake of unity. Thus not This principle, it will be seen, has been observed in the illustrations given in Plate XII.

Details calling for continued examination should be excluded, as the positions occupied by them are not favourable for minute observation; the operation of puzzling out a complicated design, or reading an interesting subject, would at the best result in cricking the neck. Therefore, the design should be of a pleasant character, easily seen at a glance, and readily understood*; and in that respect should differ from a wall, whose decoration may be composed of more interesting material, and be more intricately arranged.

Subject to these considerations, the same principles that have been advocated for other surfaces apply to ceilings, as regards laying-out, distribution of elements, composition of line, and mass.

* The ceilings of large halls and rooms can be reasonably decorated with more interesting subjects than smaller ones, because of the number of points of view from which they can be examined.

Besides flat ceilings, there are others of different forms that should be mentioned, such as the coffered, arched, and domed. The first is a horizontal ceiling, having sunk panels lying between longitudinal and transverse beams; its decorative treatment does not in principle differ materially from that required for other panelled arrangements—severe ornament on the structural beams, and freer ornament in the panels. The deep recession of these, however, often calls for more definition of the decorative details than is accorded to panels of shallower depths. Arched and domed ceilings, applied respectively to rooms of oblong or circular plan, graduate from the vertical walls of the rooms to the crown, and thus afford opportunities for a more varied decorative treatment by the introduction of elements not fitted for a horizontal surface. The decoration of these curved surfaces may fitly combine the treatment of vertical and horizontal ones. Vertical ornaments, figures, etc., at the lower part; horizontal ones at the top; the whole being graduated together.

In decorating the floor of a house, whether by carpets or otherwise, the prime condition to be met is the essential *flatness* of its surface; and, therefore, any decoration that tends in appearance to interfere with this quality is wrong. This wrongfulness is second only to that of making the floor actually un-

even. The general practice of decorating by the use of carpets leads to more artistic sins than the use of other methods—such as encaustic tiles or parquetry. Carpets are too frequently designed with a view to produce effect when displayed in shop windows, and to catch the eye of the purchaser, who for the time may be so forgetful of the suitability of his purchase to the apartment which it is destined to adorn, as to allow mere prettiness of pattern to rule his choice. In order to design patterns for floor-covering, the expression of even flatness and firmness should be the aim of the designer. To effect this, he will have to consider the class of forms and lines to be employed, and the relation of tones and colours. Patterns of a rectilinear character will better express than curvilinear ones the qualities of solidity and firmness, while tones closely related will convey an idea of flatness better than those not closely related. While firmness may be expressed by the use of geometric elements composed of right lines, it is quite possible to interfere with the sense of flatness in more ways than one, either by the selection of tones, or by giving the pattern the appearance of lying in more than one plane, as in interlaced work (*see* Plate XIII.). The passing over and under of bands, as in Fig. 1, indicates an uneven surface, and, therefore, unfits it for a floor. The adoption of a pattern of this kind suggests that it is a border—borrowed from

FIG 1

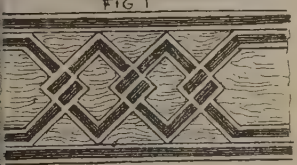


FIG 2

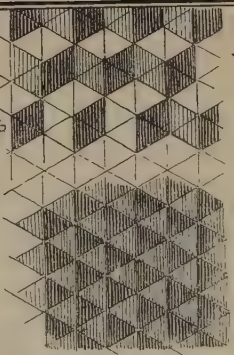


FIG 3

FIG 4

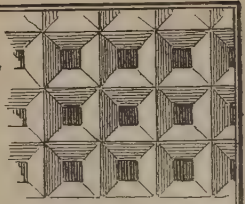


FIG 5

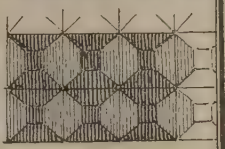


FIG 6

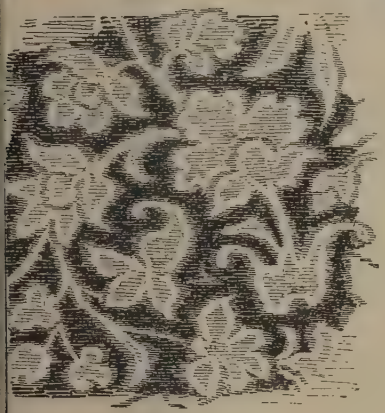


FIG 7

FIG 8

FIG 9

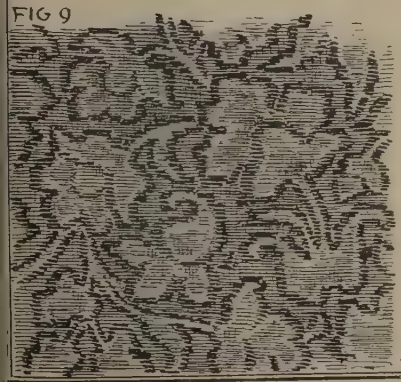
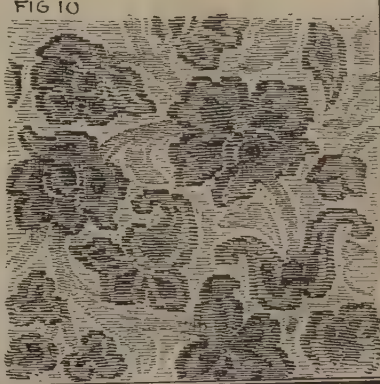


FIG 10



FG.J

decoration used for another purpose—and not adapted, but adopted. An interlacing pattern of this kind may fairly be applied to a wall, where the unevenness of the surface is not of such paramount importance. Tones wrongly applied lead to similarly faulty results (*see* Figs. 3 and 5). In Fig. 3 the effect produced by the injudicious arrangement and application of widely dissimilar tones is that of unevenness; this has the appearance of a collection of cubes set anglewise, and suggests a most uncomfortable walking surface; Fig. 5 is equally unpleasant. These defects may be easily cured by only slight modifications. In the first case, if the bands, instead of interlacing, are made to intersect each other (as in Fig. 2), the quality of flatness will be secured; and, in the second, if the tones be rearranged and in nearer relation to one another (as in Figs. 4 and 6), the same result will accrue.

In carpets the patterns may take less rigid forms than those used for parquetry, mosaics, etc., because, in addition to the expression of firmness and flatness, regard must be paid to the nature of the *material*, which may be more or less flexible in character. Apart from the essentials pertaining to all floor-coverings, there is a quality belonging to carpets, and more particularly characteristic of some kinds than of others, which requires consideration—namely, a soft and slightly yielding surface.

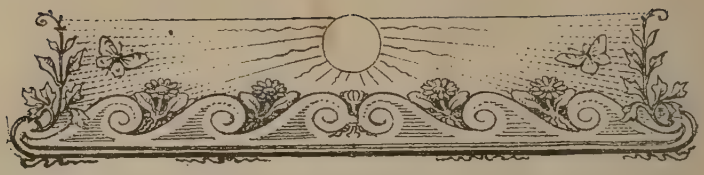
Hence it will be well that patterns for this purpose should combine curved lines, which express softness and flexibility, with straight lines and angular forms, which symbolise firmness and strength. It is just this happy combination of qualities which gives such pre-eminence to Oriental carpets, and renders them so superior in design to most European productions. Throughout these works, there is a general regard for essential conditions and a ready acceptance of means to the ends sought after. While recognising the suitability of flowing lines to represent flexibility, there is no omission of rigid ones as expressive of firmness; and so we find that Oriental artists are quick to avail themselves of the peculiarities of the loom by accepting the angular forms which result. In England the contrary too often rules; and, instead of frankly accepting the natural results of the process, designers are apt to regard them as difficulties to be combated and struggled with. Again, although we may have patterns which are all right as far as lines are concerned, they may become all wrong by the injudicious application of tones which may give harshness and unevenness to the designs. Take, for example, the illustrations on Plate XIII. In Fig. 7 there is an uneven effect and hardness of outline resulting from tones of great intervals. Fig. 8 is flatter in effect; but there is still some harshness, because of the

great difference between the tone of the ground and that of the outline of the pattern. In Fig. 9 the tones are brought nearer together, and result in even flatness and softness; the outline of the pattern melts, so to speak, into the ground. In Fig. 10 is given an example of a mode of applying tones which is too often seen, but which should be avoided; the "lumpiness" of effect resulting from such a distribution of tones is most unpleasant. When first devised, this "lumpiness" may have secured praise as a "novelty"; but could not expect to endure the test of just criticism, which requires that a novelty to be acceptable must come within the limits of artistic requirements.

The decoration of floors, by whatever means, should be so designed and used as to be in sympathy with the sense of repose and in harmony with the natural desire for cheerfulness—the one calling for unity of effect, the other for variety and contrast. The degree in which these mental desires should be met will depend on circumstances. As a general rule, the floor ought, in the treatment of tone and colour, to so harmonise with the dado that the walls of the apartment may be united thereby. Although the floor is to harmonise with the dado, this harmony does not preclude the introduction of a certain amount of variety and contrast: this amount will, to some extent, be regulated by the

character of the dado. Contrast and variety are not to be excluded, but kept in subordination to unity of effect. The use of a bordered carpet, with a margin of actual flooring between it and the skirting board, admits of more variety and gradation in the decoration of the floor than was formerly the case when the *entire* surface was covered. What has already been said about borders generally applies to these special ones, subject, of course, to the conditions belonging to carpets. Borders have a structural value, and require to be duly proportioned to the enclosed centre of the carpet, and also some considerable thought in suitably arranging.

In reference to this matter, the study of Oriental carpets and rugs will well repay the student, as it will afford him many a silent and valuable lesson in the proportionate adjustment and grouping of borders with proper regard to the general effect to be produced.



CHAPTER III.

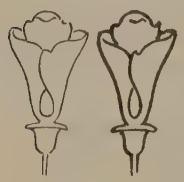
METHODS OF EXPRESSION.

IN this chapter it is proposed to consider some of the modes by which ornament is expressed, and the purposes to which those modes may be applied. There are three ordinary methods of expression: (1) surface lines, as in *outline drawing*; (2) surface massing, as in *painting*; and (3) relief massing, as in *modelling and carving*.

The first and second are appreciable by sight only, the third by touch as well as by sight. Modifications of these methods occur; so that ornament, in outline or in painted masses, is often recognised by touch as well as by sight. For instance, when lines are incised or raised, as in the decoration of ancient pottery and metal work, and when forms are painted

with "slip," as in Oriental and other ceramics, gesso work, etc.; but this arises, as will be seen later, from the fact that these modes of decoration appropriate, in a slight degree, characteristics which belong to modelling or relief expression. Take first the simple linear method, which may be seen in the decoration of prehistoric pottery, etching, engraving, etc. Expression by line is the one very generally used, and in modern education the one mostly encouraged; it is the outcome of the readiest means of execution—the stylus, pencil, and pen. Good outline is of the greatest importance to the artist, to whatever branch of art he may ultimately devote himself. We are told by some people that there is no such thing as an outline in nature. Theoretically, this is true; but, while there is no outline, there are definite limits to objects and natural forms, and these have to be defined in the linear method by a decided line accurately following those limits. Admitting the practical necessity of an outline for depicting forms and expressing ornament, the next thing we have to do is to determine the quality of line to be used. In outline drawing, as a general rule, the lines should be intentionally of a uniform strength; but when it is found necessary to depart from this uniformity, by employing lines of different thicknesses, it should be done for the purpose of expressing some *additional facts*

connected with the subject of representation, and not solely for "effect." To strengthen the outline for the purpose of representing shade as seen in a piece of relief ornament, is altogether wrong, not only because it attempts to express badly an accident of lighting, which does not belong to the original, but because it results in a false representation of form. As Mr. Ruskin puts it: "A circle represents a sphere in outline; but if you thicken it in some part with the idea of representing shade, the shape is no longer that of a true sphere. If thickened on the outside it becomes too wide: if on the inside the space within is not circular, and at the same time shade is not expressed." But this does not preclude the use of light and dark lines; it is simply an argument against using them in a wrong way. Light and dark lines can, without any sacrifice of truth, be used to express form. These two drawings of the same form both express the same facts, and are as true in the one case as the other. The choice of line will depend upon the amount of distinctness or force we require for our work. If, for instance, we wish to express the bold and distinct relief of a piece of sculptured ornament, a strong line will be the better to use; if, however, our subject be a delicate low relief, then a light line will



be the more suitable. In the first case, we use lines strongly contrasting with the surface on which they are drawn; in the second, lines that assimilate with the tone of the ground.

When we desire to represent a piece of work in which are combined both bold and delicate relief, such as a group of objects, or a plant, portions of which are near and remote, the lines may be varied so as to represent the different degrees of relief, and may be so thoughtfully carried out that an outline drawing would convey a fairly accurate idea of the projection and recession of the various parts composing the subject. By varying the lines in this manner, we are enabled to express *more* than the shapes presented to us, and while the drawing is rendered more interesting and effective by the use of lines of unequal thickness, there will be no sacrifice of truth in the representations. *See* Plate XIV. Figs. 1, 2, and 3 show different outline treatments of similar pieces of ornament. Fig. 1 is from a relief of uniform height from the ground on which it was modelled; consequently, a line of equal strength is sufficient for the purpose of its representation, as form lying in one plane only had to be defined. In Fig. 2 some parts have a higher relief than the rest—*i.e.*, the pattern lies in two planes, one above the other — the higher portions being the central bud form, with the

rosette at its base, and the upper side of the two large side leaves. The differences in the relief are expressed by the use of strong contrasting lines for the higher parts and of lighter ones for the lower; and, as all the parts lie in only two planes, the sets of lines used are each of uniform strength. In Fig. 3 the relief is more varied, and is graduated from the lowest to the highest plane; and, therefore, the lines required for its expression are such as vary in thickness or strength throughout their courses. Figs. 4 and 5 show the application of lines of varying strengths to decorative work.

Outline, besides being used for the purposes indicated, can be employed to express various qualities, such as softness, rigidity, flexibility, grace, etc.

But, although the point or stylus may be used for the production of line work expressing a great variety of forms and qualities, its capabilities are limited; and masses and quantities should be expressed by the aid of the superior powers of the brush.

It is very remarkable that in the prevailing methods of art instruction drawing with the brush has received little or no attention. While our national scheme gives, perhaps, too much encouragement to line drawing, it gives no stimulus to space or mass drawing by the brush. This omission is to be regretted, as practice of this kind bears so directly on many artistic industries. The

FIG 1
FIG 2
FIG 3
FIG 4
FIG 5
FIG 6
FIG 7
FIG 8
FIG 9
FIG 10
FIG 11
FIG 12
SECTION
FIG 13
FIG 14
FIG 15
FIG 16

use of the brush is capable of developing powers of drawing beyond all other means; and, while it will assist the student to more rapidly appreciate the value of quantities by directing his attention to spacing and to the solidity of the forms used, the freedom of hand acquired by the employment of the brush will affect his line work and raise its quality. Whatever may be thought of the Japanese as decorative designers, there can be but one opinion as to their merits as draughtsmen, and their skill in drawing is largely due to their being accustomed from their youth upwards to the use of the brush as a writing and drawing implement. The power of drawing seen in their line drawing, which for vitality is much superior to the generality of European work of a similar nature, has been developed from the restricted use of a hard point. In his Oxford lecture on "Line," Mr. Ruskin, after speaking of the practice of the Old Masters, says: "The fact is that, while we have always learned, or tried to learn, to paint by drawing, the ancients learned to draw by painting. The brush was put into their hands when they were children, and they were forced to draw with that until, if they used the pen or crayon, they used them with the lightness of a brush or the decision of a graver."

By substituting the brush for the pencil-point, we have a direct means for expressing mass and space as

well as line. Linear ornamental elements translated by the brush become enriched and gain special characteristics by the process; lines so changed, and forms which are the natural outcome of the implement, not only largely increase our range of ornamental material, but also augment our methods of expression. With the brush we are able to readily render ornament (1) by accented lines, as at *a*; (2) by simple flat tints of uniform strength in masses (*c*); (3) by graduated tones (*b*); (4) by the superposition of tones (*d*); (5) by an arrangement of tones side by side, in imitation of relief work (*e*). Simple brush work may be used in a positive or negative way — *i.e.*, by painting in either the pattern, as at *b*, or the ground, as at *f*. By juxtaposing different tones and colours (*g*) very rich effects can be obtained, and still richer by superposition. These methods of applying brush work not only serve to enrich our patterns, but also enable us to adapt them to particular grounds, light or dark, so as to secure distinctness or softness of effect, as cases may require. On Plate XIV. are given several examples of brush work showing the different modes of applying tones. The upper left-hand corner of Fig. 6 shows the

laying of uniform tones; the right-hand corner of the same pattern is enriched by a line of the same tone laid around it. In the lower part of the same design the flowers are composed of forms in different tones juxtaposed. In Fig. 7 are shown other arrangements of juxtaposed tones. Fig. 8 consists of a group of examples illustrating the superposition of tones, and *b* is an example of this principle seen on a clover-leaf, where it takes the form of a connected pattern covering the three leaflets. *c* shows the application of the foregoing to an ornamental pattern. In Fig. 9 is given the method of superposing tones after the manner of relief work. The employment of tones in this way brings us to a form of decorative painting which comes very near to imitative work—imitative to the extent that it suggests relief sufficiently to take it out of the category of mere flat decoration. How far this imitative quality should be carried is a question of taste; it should, however, never be indulged in to the extent of producing deceptive relief either by imitating strong cast shadows on the ground or by adding anything that will tend to give to it a fictitious realism. The aim should be to increase the interest of the work, and not to cheat the vision. The amount of relief given to the work should be regulated by the conscious knowledge of the character of the surface upon which the pattern is produced. It will be

EXAMPLES OF ORNAMENT EXPRESSED BY THE DIRECT USE OF THE BRUSH.
FIG 1
FIG 2
FIG 3
FIG 4
FIG 5
FIG 6
FIG 7

obvious that all these simple methods of treating surface decoration, indicated at *a*, *b*, *c*, *d*, *e*, *f*, *g*, are, with the exception of *e*, suitable for application to movable objects, such as textile hangings, pottery, etc., while *e* is better fitted for designs made to occupy some fixed or permanent position. Fig. 10 is an example of ornamental brush lines.

On Plate XV. are given illustrations of direct brush work. Figs. 1, 2, 4 and 5 are taken from old Damascus tiles; Fig. 3 is taken from Chinese pottery; Fig. 6 from a Flemish earthenware plate of the seventeenth century; and Fig. 7 was drawn from an old Persian plate—an example of pure brush work in colour, expressed by line and mass.

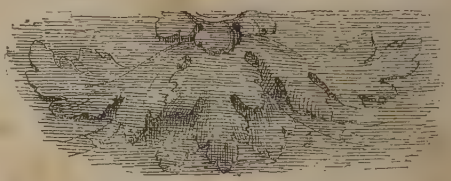
Modelling and carving, unlike the other modes of giving expression to ornament, are not restricted to one plane for their development; but lie in many planes, and are concerned with *actual* light and shade. Our appreciation of sculptured and modelled work depends very largely upon its being designed for holding shade and shadow. Whether it be made for graduated shade, or for the exhibition of strong contrasts of shadow, will depend on circumstances of position and of lighting.

There are two distinctive kinds of relief work, namely (1) *sunk relief*, or cavo-relievo, in which the outline of the work is deeply incised, and the spaces between

caved, the design being slightly below the ground (*see* Plate XIV., Fig. 11); and (2) *raised relief*, wherein the ground surrounding the design is lowered, leaving the work projecting from it (*see* Fig. 12). Of raised relief there are many varieties, to which names have been applied to indicate various degrees of relief. The terms used are *flat relief*, or stiacciato; *low relief*, or basso-relievo; *half relief*, or mezzo-relievo; and *full relief*, or alto-relievo. In the first, the work is in but slight relief from the ground, and the forms have very little projection, as on our coins. In the second, the relief is greater, the modelling of the design has more variety, and the forms are rounded, as in Assyrian sculpture. In the third, we have the subject still more raised, but no parts are detached from the ground. The fourth kind shows the greatest amount of relief possible, with portions entirely free from the slab upon which the work was wrought, as in the metopes of the Parthenon. A development of alto-relievo results in entire relief, or sculpture in the round, as seen in statuary.

Low relief requires clear, bright light for its elucidation, while high relief with bold undercutting is better for cloud or diffused light. The rounded form of relief is best seen in a direct side light, as in this sketch:

The same relief, seen in shadow by reflected light only, becomes ineffective, as the surface modelling is lost, and only the deep cutting and definite edges are visible; thus:

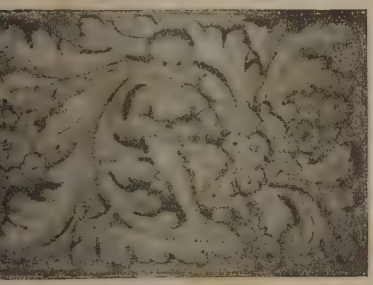


A square-edged treatment, with strong incisive lines, is therefore better adapted for dimly-lighted situations. Again, objects which are movable and for close inspection, may be appropriately decorated with modelled work in low relief; for, while they can be always placed in a light that will bring out the beauty of the modelled surfaces, the relief will in no way interfere with their use or their outlines. If the decoration is to occupy some permanent position, then the nature of the relief will have to be specially considered; whether it will be viewed in open daylight or in shadow, or whether it will be seen near to the eye or at a distance. As regards lighting, a comparison of Classic sculpture of the sunny South with Northern Gothic will serve to make clear the broad general principle upon which the selection of relief should be based. On Plate XVI. is shown two treatments of relief work, and the effect that different ways of lighting have upon them. The two distinct ways in which relief may be executed

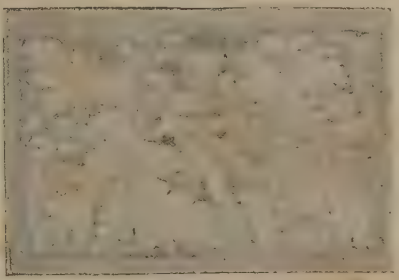
EFFECT OF LIGHTING ON RELIEF WORK.

A.

B.



No. 1.



No. 2.

No. 3.

No. 4.

F.G.J.

(A) SQUARE EDGED RELIEF, FLAT SURFACE, SIDE LIGHTED.

(B) ROUNDED RELIEF, UNDULATING SURFACE, SIDE LIGHTED.

(No. 1A) SEEN IN DULL LIGHT.

(No. 2B) SEEN IN SIMILAR LIGHT, SURFACE MODELLING LOST.

(No. 3A) LIGHT DIRECTLY IN FRONT, FLATNESS ACCENTED.

(No. 4B) IN EXTREME SIDE LIGHT, ROUNDED RELIEF INTENSIFIED.

are by carving and modelling ; and as both the methods of execution and the materials employed vary, so the results should exhibit distinct characteristics. In carved work you have, so to speak, to dig out your design from a hard material ; in modelling you build up your forms with a soft and pliable material ; for these reasons, if for no other, terra-cotta should be easily distinguishable from stone carving. The finishing of terra-cotta should not be carried on in the direction of imitating carved work, but in conformity with the plastic nature of the clay ; so that, when converted into hardness by the process of firing, the characteristics of the material and the method of work should be still preserved.

Relief work may be either direct or indirect—direct when the material in which it is wrought, carved, or modelled, remains as the final medium for its expression ; indirect when the pattern is first modelled or carved in some soft material with a view to its translation into some other material, such as bronze, iron, or the precious metals. In the case of direct work, such as is applied to furniture, a consideration of the woods employed is of importance. Dark and heavy-looking woods require bold and broad treatment, while light-coloured woods require delicate execution. When relief work is used indirectly, a consideration of the material in which it is to be finally expressed is essential ; bronze and iron, for

instance, requiring a larger and bolder treatment than is necessary for silver and gold. This is determined as much by the colour of the metal used as by its intrinsic value. While these general principles are observed, the question of scale must not be overlooked; for obviously the size or minuteness of an object will have to be taken into account in adjusting relief decoration, or, in fact, decoration of any kind.

Again, in modelling or carving for reproduction in different materials, certain ways of carrying it out will be dictated by circumstances. When the cost of reproduction is of secondary importance, the artist is left fairly free in his rendering of the relief; but, if it becomes necessary to consider economy, as in the case of cheap metal castings, or plaster ornaments for repetition, this freedom will be checked by practical considerations. In the first case, high relief with undercutting may be indulged in, because the more costly mode of producing a mould for casting can be used — such moulds being composed of any number of pieces requisite for producing an accurate copy of the original. In the second, a less varied relief and an avoidance of all undercutting will be essential, so that a simpler kind of moulding may be employed. The annexed simple

diagrams will further explain. No. I. shows the section of a piece of relief ornament. The dotted lines

indicate the pieces into which it is necessary to divide the mould, in order to reproduce the undercutting, and the formation of which entails considerable labour and, therefore, expense. No. II. shows the necessary alterations in the modelling of a similar ornament to adapt it to a one-piece mould.

The effect of relief is often aided and heightened by the use of colour : for instance, in the plaster decorations of the Moors, it appears to have been adopted in order to give distinctness to the relief ornaments which adorned their dimly-lighted interiors, and also to prevent the confusion which was likely to arise from their practice of superposing one pattern upon another, in their richer schemes of decoration. The want of light in Gothic churches no doubt primarily led to the use of colour in connection with carved work, to help its effect instead of increasing the depth of the cutting. A variety of relief decoration is to be found in pierced or perforated work, *i.e.*, work in which the ground or pattern is entirely removed. This method of treating ornament is applicable to various materials, such as wood, stone, ivory, and metal, and is invaluable in combining richness of effect with actual lightness of material. In pierced relief work,

the effect chiefly lies in the ordered spaces and interspaces; therefore any carving or modelling of the spaces, or masses of the pattern, should be subordinated, so that low relief and soft hollows should be preferred to high relief or deeply-cut incisions upon the surface of the work. Compare Fig. 13 with Fig. 14 on Plate XIV. Pierced work may have an even pattern, untouched by carving of any kind; and is often so treated with good results. Whatever form is used, or in whatever material it is expressed, the principles that regulate piercing are constant. Thus, the pattern should be as distinct and clear as possible; and to this end all oblique crossings and complicated details, which tend to confusion, should be carefully avoided. (*See* Figs. 15 and 16, same Plate.) The peculiarity of the material in which decoration of this kind is wrought, requires attention, and should influence treatment. Brittle materials —*e.g.*, some woods, stone, and pottery—require broader treatment and stronger attachments than are necessary in the case of iron or brass. If work of this kind is to be executed with the fret-saw, long simple lines in the pattern are best; intricate details and sudden turns impede the action of the saw and prevent easy execution. When, however, such work is to be executed with punches or chisels, these more complex details may be introduced into the design, consistently with clearness.

Whether the ground or pattern is cut away will depend upon the circumstance of application. If the former is desirable, the pattern will have to be connected at certain points by "ties," that it may hold together, the interspaces or ground being interrupted; if the latter, then the ground will have to be connected by "ties" crossing the pattern, which becomes interrupted and the ground continuous (*see* annexed stencil patterns). The use of pierced work

has influenced and generated other forms of decoration. Much Arabian and English Elizabethan relief ornament is evidently derived from pierced work superposed upon even surfaces; while marquetry, though properly belonging to surface decoration, is practically an adaptation of the same work, consisting as it does of the interchange of pieces of fretwork in different coloured materials—tortoiseshell, brass, white metal, etc. Stencilling, again,

is only the application of open work to the easy production of surface decoration, and is effected in the following manner: A pattern is cut out in paper or zinc and laid upon the surface to be ornamented; colour is then brushed over the openings, and, on the removal of the paper or zinc, there remains a pattern corresponding with the pattern of the stencil plate. Sgraffito is another mode of decoration which it will be well to notice here: it is used for wall decoration, and is exceedingly effective in its various treatments, which range from simple incised line work to low relief in mass. This kind of decoration is thus produced: A thin layer of light-coloured plaster or cement is superposed on a dark one, either black or coloured; and then the design, previously prepared on paper, is transferred to the surface. The pattern is next cut with a knife through the light, or upper, layer down to the under, or dark, substratum of plaster, revealing a light pattern on a dark ground, which may be in line or mass according to taste. If a thicker upper layer of plaster be em-

ployed, it may then be carved; the effect being a low relief on a coloured ground, rather like that of Wedgwood ware. Gesso, again, is a variety of relief work executed with the brush, and, therefore, may be properly called relief painting. A mixture of plaster of Paris and diluted glue is made of about the consistency of cream, and this is painted on the surface to be decorated: first, thinly; afterwards, by successive touches, the gesso is piled up until the limits of low relief are attained; by the addition of cotton wool or tow a high relief can, however, be secured, and when it sets hard, as it will do in a little time, the work may be carved, tinted, and coloured. A harder and a finer variety is composed of one part resin, four parts of linseed oil, and six parts of melted glue; a small portion of whitening, soaked in water, being added to give substance and opacity. This takes longer to dry; but, when set, it becomes very hard and can be highly polished. Latterly, some patent materials used by house decorators have been successfully employed for gesso work—such as "Alabastine" and "Denoline." The former is the more easily manipulated.

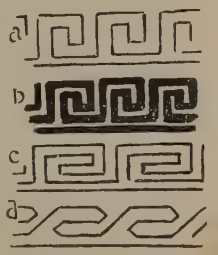
CHAPTER IV.

ELEMENTS OF ORNAMENT.

THE character of ornamental art depends greatly on the details employed, as well as upon modes of arrangement. Although good ornament is possible with simple materials, yet, undoubtedly, the higher forms of decorative art must include the noblest elements. While we are naturally drawn to those compositions which include the highest organic forms, we should not discard the use of those composed of less interesting materials, because they hold a place and fulfil a useful though humble function in the decorative systems. The elements of ornament are drawn from many sources, and may be broadly classified under two heads: the ARTIFICIAL and the NATURAL. These, for convenience, may be subdivided into (1) *Geometrical*, (2) *Architectural*,

(3) *Industrial*, (4) *Vegetable*, (5) *Animal*, and (6) the *Human Figure*. Under the first come frets, interlacings, traceries, geometrical diapers, etc. Under the second, columns, entablatures, pediments, pilasters, labels, cartouches, etc. Under the third, tools, musical instruments, draperies, ribbons, candelabra, vases, arms, etc. The fourth will include, plants, leaves, flowers, fruits and roots, festoons, acanthus foliage, rosettes; and the fifth, fishes, birds, quadrupeds, insects, reptiles, griffins, dolphins, shells, etc. The sixth division will comprise, adult figures, amorini, caryatides, telamones, terminals, etc. To consider fully all the elements which might come under the several heads would be quite impossible within the limits of this work; and we will, therefore, content ourselves with the consideration of some of the more important in each class, commencing with those included under the first sub-division. (1) *Geometrical Elements:* The simplest elements are the right-lined ornaments, the frets, which are useful for ornamenting flat surfaces, and which occur in all historic styles. They are chiefly employed for borders, for which their firmness of expression eminently fits them; but many diapers formed of them are to be found, especially in Japanese and Egyptian art. Frets, as borders, may be variously set out, according to the purpose for which they are required. Usually the

pattern and the ground are equally spaced, as in Fig. *a*; but this need not always be the case, for a more pleasing effect can be obtained by unequal spacing, as in Fig. *b*. Then, again, they need not always be based upon the square, but may be based upon the oblong, as shown in Fig. *c*. This form will be better for the expression of horizontality, but many frets are to be met with, chiefly Oriental, in which oblique lines are introduced, as in Fig. *d*; and these are very suitable for flat inclined surfaces. Interlacings and traceries, composed of oblique, vertical, and horizontal lines, serve for similar purposes, and possess more interest from the variety infused into their composition. The use of curves, either in conjunction with right lines or by themselves, leads on to a richer series. Interlaced patterns, based wholly on the circle, will give such patterns as the Guilloche and the Money border (*see* Plate XI.).



Geometrical figures and spacings are valuable elements, and lie at the base of those elaborate and intricate patterns in which the Oriental artists and the mosaic workers of the Middle Ages so freely indulged. The use of these figures in the construction of diapers has already been pointed out in Chapter I.

CHAPTER V.

ARCHITECTURAL ELEMENTS.

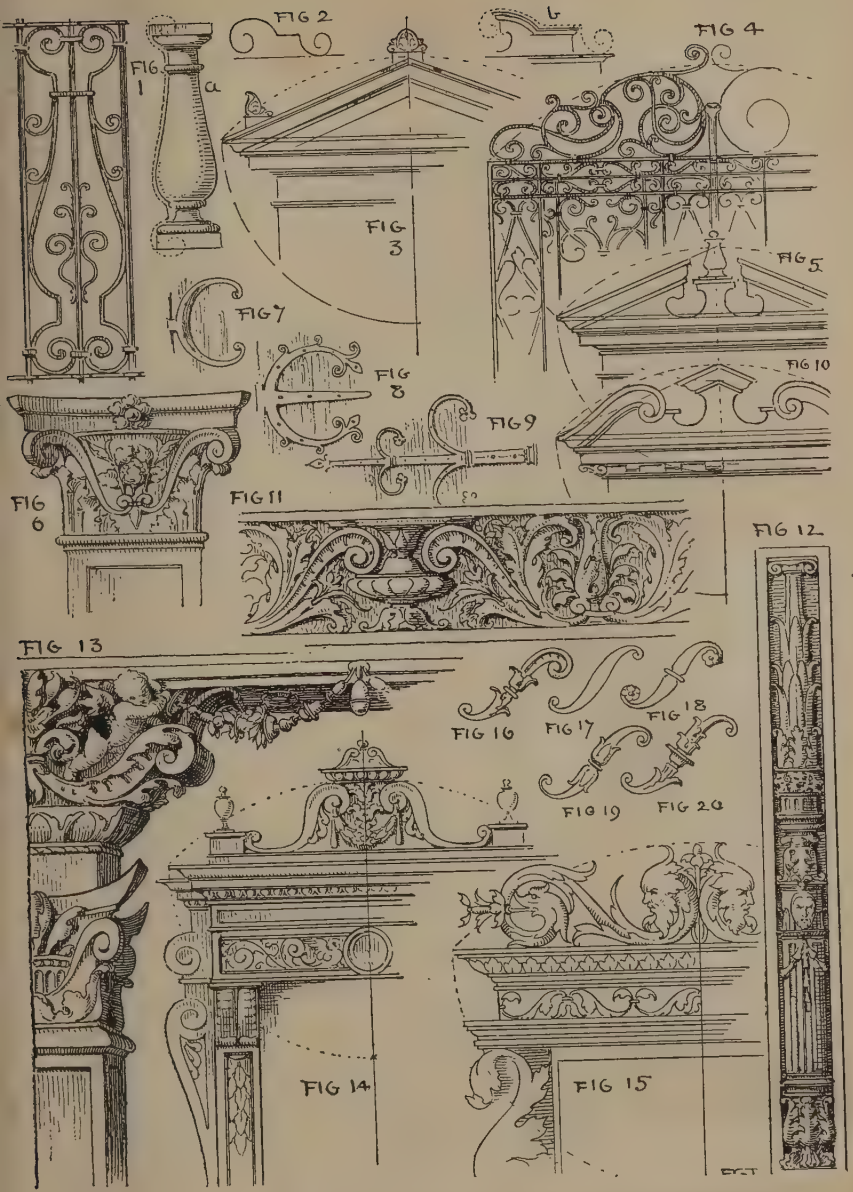
NEXT in order come architectural elements. Architecture, rightly understood, is the art of æsthetic construction—not construction merely, but construction allied with beauty—not made beautiful by superadded decoration, but by beauty inherent in its construction. In good architecture we recognise the fullest expression of the inventive and constructive faculties, together with a regard for beauty; and, as it is based upon order, fitness, proportion, stability, and grace, elements drawn from such a source necessarily possess qualities so high as to command the attention of the ornamentist. The chief concern of decorative art is with beauty of line, form, and colour, and it has less to do with constructive necessities than architecture. The freedom it enjoys

from that restraint which attends æsthetic construction, is, without some counteracting influence, a dangerous liberty, liable to run riot; but the employment of architectural elements offers a means for minimising such a tendency. In all the best periods of ornamental art the influence of architecture is distinctly seen. It is traceable in pottery, stained and painted glass, iron-work, jewellery, the decoration of panels, pilaster shafts, etc. Architectural forms, pure and simple, are often incorporated in decorative designs, but are oftener modified by the imagination, so as to bring them into harmony with other and freer details, with which they become associated. Hence, while some forms are distinctly architectural, others are but suggestive (*see* Plate XVII., Fig. 13, a capital by Holbein). Now, in adapting architectural forms in a design, it is not essential that the rigidity necessary in pure architecture should always be maintained, because the same structural conditions have not to be dealt with. In the case of architecture, actual physical weight has to be provided for; in decoration, the appearances of weight only; and so long as the eye is satisfied with the semblance of stability, freedom of treatment can be indulged in. The reason given above for modifying the severe forms of architecture—namely, that they may be brought into harmonious relation with more ornate elements—justifies such treat-

ment; and the history of architecture itself furnishes instances in which forms, taken from a severe style to be used in a richer one, underwent considerable change to fit them for their new position. Take one example from Roman art. In adopting the Grecian Doric column *a*, it was necessary to so soften and tone down its severe features as to bring it into harmony with the richer ornamental system associated with the Corinthian order. This was the Roman practice. The original column would have been discordant and disturbing to the general unity of the work in which it was employed; it was, therefore, so to speak, revised (as Fig. *b*). It was made taller and more slender, had a moulded abacus, a distinct necking was given to it, and a base added. Whatever modifications are indulged in, care must be taken that the variations are upon architectural lines and principles. To do this, it follows that a knowledge of pure architecture is of vital importance, if the elements from such a source are to be intelligently used. The study of architecture will not only furnish ornamental material, but will bring to light principles of high decorative importance. For instance, in regard to the crowning of supporting members like columns, the higher the column in proportion to width, the taller the

a

b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capital, and *vice versâ*. This principle, it will be seen, is also recognised in the relative pitch of the roofs of classic buildings and those of northern Gothic. Apart from climatic and other conditions, the horizontality of the former artistically requires a lower gable or pediment (Fig. 1). The vertical tendency of Gothic buildings calls for a higher pitch (Fig. 2). Reverse these and the importance of the principle is seen at once.

Fig. 1.

Fig. 2.

The value of this principle would appear to be attested in the development of Gothic windows, in which we have the long narrow ones of the lancet period surmounted by an acutely pointed arch; while in the later phases of the style these apertures widen, and the crowning arch becomes depressed (Figs. 3, 4, and 5).

Fig. 3. Fig. 4. Fig. 5.

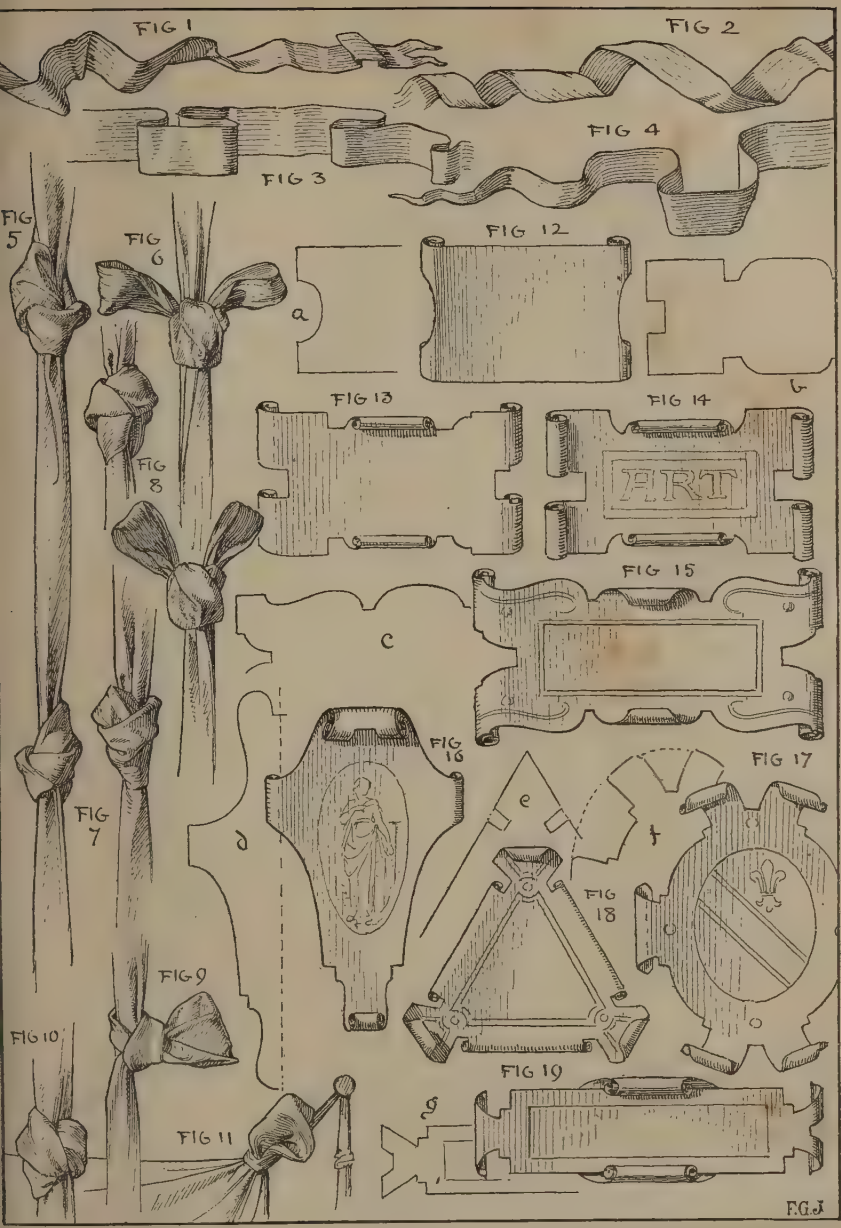
This general principle is a guide in proportioning the superadornment of rectangular spaces, whether of frontispieces of books, or a pair of park gates in wrought iron; in fact, many historic examples show that this proportion has been observed by their designers (Plate XVII., Figs. 4, 5, 10, 14, and 15). Each of these five figures on Plate XVII. appears to be controlled, in its general lines, by the proportion of the classic pediment, which may be

roughly determined as shown at Fig. 3. Place one leg of the compasses on the point where the vertical central line crosses the horizontal cornice, and extend the other to the extremity of the latter, and then describe a quadrant, cutting the vertical line below. Taking the intersection thus made as a centre, and with the chord of the arc as a radius, describe a semicircle upwards, cutting the vertical line, which will determine the slant of the raking cornice. Again, mouldings usually have a projection, from the body of the work to which they belong, equal to their depth; and, when decorated, the lines of the pattern agree with the section. Such principles have influenced all good decorative work, subject, of course, to modifications by material; for instance, the tenacity of metal over that of stone will allow the projection of metal mouldings to exceed what is the safe limit for stone architecture.

Having pointed out some principles, we will now pass on to notice a few ornamental details derived from architecture. Perhaps no detail is so frequently used, more or less modified, as the volute scroll. It was designed originally to occupy the space left between the bell of the capital and the soffit of the angular abacus; as in the Corinthian capitals of columns and pilasters (Plate XVII., Fig. 6), where it assumes the function of support for the over-

hanging portion of the latter. Its gracefulness and strength render it particularly suitable for setting out friezes and other ornamental arrangements where these qualities are desirable (*see* Fig. 11). Figs. 16, 17, 18, 19, and 20 show the development this element has undergone. On the same Plate, Figs. 1 and 2 show forms often seen in old iron-work, which are derivatives from architectural details. Fig. 1 is from a baluster or dwarf column, as shown at *a*; Fig. 2 is abstracted from a "broken pediment," as at *b*; Figs. 7 and 8 are door hinges, and obviously their form is influenced by the round arch used in architecture of the Norman period. The hinge, Fig. 9, belongs to the period when the pointed arch came into use, the influence of which is seen in the change of form and in the way the scrolls spring from the central strap. Fig. 12 shows the decoration of a narrow upright panel with an ornamentally treated architectural support.

Cartouches, which we include in this section, appear to owe their origin, as the meaning of the word indicates, to the ancient use of paper or parchment labels for holding inscriptions and badges; when the latter were used, the cartouche took the form of shields. The edges of these labels or shields, when fancifully cut, naturally curled into scroll forms of an ornamental character. This, attracting attention, led to a systematic develop-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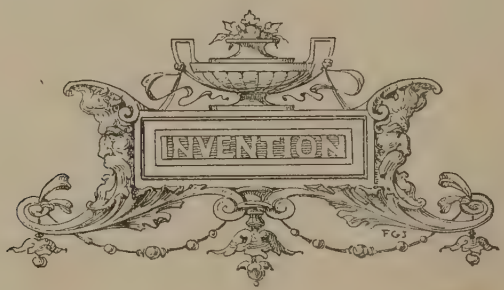
ment, and ultimately, in conjunction with interlaced ornament, resulted in that particular kind of decorative detail known as cartouche work. As an element it is valuable in design, both in its capacity as a foil to set off more interesting ornament, and as a tonic to give strength to a composition. On Plate XVIII. are shown some sketches from cut paper, with the edges rolled in various ways, to illustrate the probable beginnings of the cartouche: Fig. 12, cut as at *a*, with the projections rolled backwards; Fig. 13, cut on the lines of *b*, the parts rolled backwards and forwards; Fig. 14 is a variation of the same, all the parts being curved forwards; Fig. 15 shows a richer form, cut as at *c*; and Figs. 16, 17, 18, and 19 are obtained in the same way, the diagrams attached, *d*, *e*, *f*, and *g*, being their forms in the flat. Plate XIX. is devoted to examples showing the further development of the cartouche at different periods. After the ornamental elaboration of the edges they become thickened, a result no doubt obtained from their reproduction in carving. The thickness was sometimes uniform, but more often graduated, a refinement which added greatly to the character of this ornamental element (*see* Figs. 1, 4, and 6 from French and Flemish examples of the sixteenth century). Then we have the borders of the cartouche foliated and adorned with masks and other details based on natural objects (*see* Fig. 2,

after Holbein, Fig. 3, from a German design of the sixteenth century, and Fig. 10, from late French Renaissance). Another way of treating the edge was by the application of distinct architectural features, more or less severe, as in Fig. 8, which is an illustration taken from Italian art of the sixteenth century. Figs. 9 and 11 show the modelling of the edge into rounded forms, a treatment peculiar to the style known as "Louis Treize." Some cartouches have their surfaces pierced, as in Figs. 4 and 5, and in very rich examples we have a combination of two, or even three, cartouches superposed, portions of the upper one interpenetrating the lower, as in Fig. 4. Again, the surface is often seen panelled, as in the Jacobean example, Fig. 7, whilst Fig. 12 illustrates the application of the idea of the cartouche to strap work, which largely dominated the English Renaissance.



CHAPTER VI.

INDUSTRIAL ELEMENTS.

WE now pass on to consider the industrial elements comprised in our third division. Although for convenience we have assumed for these objects a distinct class, yet it might be fairly regarded as a sub-division of the architectural group. Theoretically and practically the distinction is but slight. If our definition of architecture be right, that it is the art of æsthetic construction, and at the same time we accept the dictum that every article fashioned for useful purposes should be fitly formed and made pleasing to the eye, it follows that industrial art and architecture have much in common. Although industrial objects have to serve the minor purposes of life, they are nevertheless architectural in character—the difference between a cup rightly designed,

and a building truly planned for a specific purpose, is rather a matter of degree than of principle. The animating principles of architecture and industrial art being identical in spirit, the results are often similar; and so distinctly is this the case, that occasions arise when it is very difficult to classify them. The classification adopted in the present instance is therefore an arbitrary one, used for convenience only.

Industrial objects, such as tools, musical instruments, vases, armour, etc., are used in a variety of ways, often in a purely æsthetic manner, but more generally for mnemonic and symbolic purposes. By the æsthetic use of objects is to be understood the inclusion of details, such as those just named, without any other aim than pleasing the sense of vision; and, therefore, the objects are selected for the beauty of their forms, and as a means for infusing variety and interest into a composition—the mnemonic, as the word implies, is their adoption for the purpose of aiding the memory in recalling facts and events; and the symbolic their employment to set forth some idea to indicate a virtue or an office. These different uses of industrial and other elements divide ornamental art into three classes: the æsthetic, the mnemonic, and the symbolic; the two latter, while being very distinct in character from the first, are nearly allied to one another. A symbol may be used to aid the

memory as well as to set forth an idea. Thus a cross may serve to recall the circumstance of the death of our Lord, and at the same time stand for the symbol of the Christian faith; or a lyre be used to bring to recollection the ancient use of that instrument or to typify the general idea of music. While the symbolic and the mnemonic have much in common, they have distinctions. For instance, written inscriptions *ornamentally* treated are mnemonic, and in no sense of the term can they be regarded as symbolic. On Plate XX. are given examples of symbolic details. Fig. 1 is a prehistoric emblem of Deity. The form of a circle points to early sun worship. The survival of this form is seen in the halo or nimbus of the Middle Ages. In Fig. 2 we have the Egyptian symbol of divinity, but in a more complex form. The circle is retained, and on either side are asps, symbols of wisdom; while the outstretched wings indicate sovereignty and ubiquity, attributes of the Deity. Fig. 3 is a similar emblem used by the Assyrians. Above the central disc is a form shaped as a bow unstrung. Being a race given to the pursuit of hunting, their conception of a god was as a King mighty in the chase. A variety of this symbol shows a King in the act of drawing the bow. In Fig. 4 is given the Egyptian *scarabæus*, or beetle,

symbol of creation, the idea of which is thus explained: The creature deposits its eggs in a mass of earthy refuse, which it rolls up into a ball, and which, by its hind legs, it drags into some spot exposed to the full power of the sun's rays; these, acting upon it, hatch the eggs. When this is accomplished, the earthy matter breaks up, and the larvæ issue forth. To the mind of the Egyptians this typified the mysteries of creation, and even the rebirth of the Resurrection. The idea is supported by the frequent use of this symbol on mummy cloths and other things connected with the burial of the dead. In Fig. 12 we have the Christian symbol of the glory of the head, the nimbus; and in Fig. 18 the aureole, or glory of the body. Fig. 13 shows the symbol of Christ: a monogram composed of the two Greek letters of His name, Chi and Rho, with Alpha and Omega added to indicate His eternal character. Fig. 14 is the cross, symbol of Christianity, and a remembrance of the Saviour's sacrifice. This is the Latin form of cross. Fig. 15 shows the Greek form, and Fig. 16 the Maltese, whilst Fig. 17 is the Cross of St. Andrew. Fig. 6 is a classic symbol, the caduceus, or winged staff of Hermes, the god who, it was said, presided over commerce and industry. The story runs that Apollo, when giving a golden wand to Hermes, told him that it had the power of uniting in love all beings divided by

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FIG 37

hate. Hermes, to test it, threw it down between two snakes which he found fiercely fighting. The combat ceased; they twined about each other in loving embrace, and, curling round the staff, became permanently attached thereto. From its association with Hermes, the caduceus has been accepted as the symbol of commerce and the industrial arts. The parts composing it each have separate symbolic meanings, thus: the staff power, the wings despatch, and the serpents wisdom. Fig. 11 is a modern symbol of handicraft—*i.e.*, of hand work directed by the intelligence. Two forms of the thyrsus, a symbol of festivity and gaiety, are shown in Figs. 9 and 10. Its origin is attributed to the ancient practice of crowning a spear-head or a staff with bunches of vine-leaves or fir-cones, for use in the dance at Bacchanalian revels. The vine-leaves had reference to the wine used on those occasions, and the fir-cones and leaves to fire,—because, as the revels were held at night, or in dark retreats, torches were used, and these were generally made of the wood of fir-trees. Figs. 19, 23, and 24, show the different ways in which torches can be employed to symbolise various ideas. Fig. 19, in its upright position, is a symbol of life. Its reversed position, as in Fig. 23, signifies death. By representing the flame ascending, as it naturally would do when the torch was inverted (*see* Fig. 24), it will serve as an

emblem of death and resurrection. Progress of civilisation, etc., is symbolised by a winged wheel (Fig. 29). Figs. 32 and 33, the trident and rudder, are nautical emblems, and are associated with the sea-god Poseidon, or Neptune. The lyre and sistrum (Figs. 27 and 34) are musical emblems, and, as before pointed out, can also be used as mnemonic signs. Figs. 30 and 31 are symbols of the drama—tragedy and comedy. These were derived from the ancient Greek practice of using special masks to indicate the characters of the play during its representation on the stage. Fig. 26 is from Assyrian art, and represents the sacred tree of life. Fig. 20 is a symbol of the course of human life, and is of frequent occurrence in Renaissance decoration. The upright position of the symbol indicates the beginning or start in life, and leads on to the point where the roads diverge to right and left—to good and evil. Figs. 22 and 25 are examples of mnemonic ornament—inscription ornamentally treated; and Fig. 22 from the Moresque, which abounds in this class of ornament. Fig. 25 is modern; the letters of the quotation are interwoven and treated as ornamental elements. With this inscription symbols are combined to indicate the flight of time—wings at each end, and a winged hour-glass in the centre.

The objects grouped in Fig. 28 are used to symbolise

learning and literature. Monograms are often used in decorative designs, and consist of letters interlaced, as shown at Fig. 36. When, however, the letters are reversed and more intricately combined so as to be less easily read, they are called ciphers (*see* Figs. 35 and 37).

In grouping tools, musical instruments, or other elements together, either as centre ornaments or for filling panels, other industrial products, such as draperies, ribbons, and cords, occur and are of very great use,—draperies for giving flexible masses; ribbons for tying together, for filling awkward spaces which often occur in practice, and also for relieving the heaviness of effect likely to result from the use of massive detail. The employment and development of ribbon material comes naturally in some arrangements. In the decoration of an upright panel, when the objects are strung together and suspended, it is desirable not to hide, but to show, the means of suspension, and to present them in as pleasant a form as possible. The inevitable knots, bows, and ends connected with this mode of treatment should be carefully studied for the lines of exquisite beauty which they reveal, not only in historic examples, but, primarily, in actual ones formed of different materials. Their value is mostly to be appreciated in conjunction with other elements, but even used by themselves they furnish very fair ornament (*see* headpiece, page 101).

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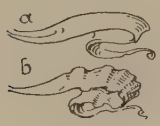
FIG 6

The flying ends of ribbons assume a variety of curves, the movements of which have been taken advantage of in historic art. Sometimes we have a simple flowing movement (*a*), at other times the smoothness of flow is relieved by a rippling of the surface, which adds materially to the richness of effect (*b*). On Plate XVIII. are given examples of ribbons, narrow draperies, and knots sketched from actual material, to show the origin of these details which so frequently occur in the ornament of different periods (*see* Figs. 1 to 11). Further illustrations of the treatment and use of ribbons will be found on Plate XXI., which is devoted to historic examples of the ornamental grouping of armour, tools, etc. Fig. 1 is a group of musical instruments strung together by drapery, an example of French decoration of the eighteenth century. Fig. 2 is a cluster of instruments consisting of a tambourine, trumpets and flutes, with which are entwined wreaths of olive-leaves. The whole group is suspended by a ribbon, the flying ends of which have a rippled surface. Fig. 3 is a modern example of a decorative arrangement of tools by the late Alfred Stevens, and shows a very skilful adjustment of unpromising ornamental material. Fig. 4 is a panel decoration, composed of shields tied together with ribbons. Fig. 5 is taken from a piece of



sixteenth century Italian pottery. In this example the ribbons play an important part, and are ingeniously used to fill up the somewhat awkward spaces between the groups of arms, labels, etc.; although the result is not altogether satisfactory, for the redundancy and fluttered character of this element conveys a feeling of unrest and want of repose. Fig. 6 is a modern design composed of musical instruments and art objects, with foliage appropriate to the idea of the composition. On comparing the foregoing examples it will be seen that where the elements are so different in form and the groups are suspended, the arrangements are upon the principle of *Balance*; but where the forms are selected for their similarity of shape, and the groups are merely superposed on a ground, to which they adhere for support, they approach more or less to a *Symmetrical* order.

CHAPTER VII.

VEGETABLE ELEMENTS.

WE have now to consider those classes of elements which are derived directly from nature, taking the first subdivision, namely, vegetable forms. Here the material presented to the ornamentist is both varied and abundant, capable of easy adaptation to his requirements. The history of decorative art shows the constant employment of such material, and exhibits also great variety of treatment, from the realistic to the severely conventional; at times dangerously near to too literal transcription to be consistent with good ornament, at other times only suggesting the originals. When plants are reproduced realistically, they cannot be regarded as ornament: because they show no attempt at idealism or adaptation, principles which lie at the root of all good

ornament. Therefore, except for symbolic or mnemonic purposes, plants should not have a literal interpretation; for, as Sir Gardiner Wilkinson points out: "The imitation of natural objects, for mere ornamental purposes, usually disagrees both with the material used and the place where they are introduced; it is also an indication of poverty of invention, and a deficiency of taste in design." So-called decorative art, whose Alpha and Omega consist in the copying of natural details, is the refuge of the ignorant, who, in their narrow view of nature-worship, often grossly violate her laws and principles. In the study of plants for decorative purposes, it is necessary that one should become acquainted not only with the ideal forms of leaves and flowers, as set forth in Chapter IV., "Lessons on Decorative Design," but also with their life's history from the cradle to the grave, their habits, the conditions under which they thrive, and the nature of the curves that their varied growths suggest. Rose and tree should be infinitely more to an artist than they are to a mere cultivator of flowers. The latter may revel in the symmetry of his plants and the doubleness of his blooms; but the former should discover other beauties than those which consist in a "well-shaped shrub" or in the complexity of a "doubled flower." Suggestiveness of line and simplicity of form are of more importance to the

decorator than the peculiarities of the latest product of the scientific cultivator.

Consider plants in their entirety: roots, stems, leaves, flowers, and fruits, and what a boundless store of suggestions are presented to us! Yet how little some designers avail themselves of them, being satisfied to repeat old conventional forms, or to take the most ordinary ready-to-hand treatments of natural forms, or culling from the pages of some "herbal," and never troubling themselves by personal research for those inspiring motives with which nature has surrounded them. For instance, how often do we see in so-called naturalistic panel decoration pots and vases used as start-points, till one is sick of their wearisome repetition. Not that pots in themselves are bad as start-points,—on the contrary, they are reasonable ones; but it is their constant repetition, to the neglect of those furnished by nature in the varied roots from which plants spring. The many different forms roots assume afford admirable suggestions, and much more might be done with them than has been attempted. On Plate XXII. are given some types of roots, and Figs. 1-9 show their simple ornamental rendering. Figs. 10-13 show the adaptation of plants, with their natural start-points. In Fig. 10 is given the adaptation of the white lily to a somewhat fancifully shaped space, the earth line entering into com-

PES of ROOTS &c.
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position with the bulb and root. Fig. 12 is a study from the couch grass, and shows a further ornamental treatment of the ground through which the underground stem of the plant runs; Fig. 11, the top view of a plant, showing the fibrous root developed into tracery, and accented so as to form a contrast with the foliage. Fig. 13 is the conventional treatment and adaptation of the root and foliage of the parsnip to a vertical border, the tones introduced between the tracery of the rootlets being suggested by the element in which it naturally grows. These examples illustrate an important law of growth, which is too often neglected in ornamental work — that reversed growths have distinct points of departure, the ascending axis of a plant throwing off its leaves in one direction, the appendages of the descending axis in an opposite one; but the departure is marked either by a thickening of the intervening portion, or by the line of the earth in which it grows. In all good ornament of a flowing kind, however conventional it may be, this law has been observed, thus: never so and, if even more than one start-point is used, a stop is introduced to arrest the flow, as at and this, it will be seen, is in harmony with the law pertaining to plant life.

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FIG 14

In all naturalistic treatments, the direction of stems and their general composition should be closely studied for the ornamental lines that may be abstracted from them for decorative purposes. It follows that the lines so obtained from any plant will be better suited for building up a design founded on that plant than those of a purely inventive character; there will be a sympathy between the detail and the general construction in the first case that will be wanting in the latter. On Plate XXIII. are given some sketches of trees, and abstractions therefrom, for decorative purposes. Fig. 1, drawn from a young hawthorn, is ornamentally treated in Fig. 2. Fig. 3 is an ornamental rendering of a pine-tree shown in the realistic sketch, Fig. 6. The ornamental frieze pattern, Fig. 4, is based upon the lines derived from an espalier cherry-tree. Figs. 5, 7, and 8 are decorative tree forms, the lines of which are abstracted from nature, taken from Italian textiles. Other forms of a similar kind will be found on Plate XV., Figs. 1 and 2. On Plate XXIV. are given some further illustrations of the abstraction of lines from nature for the purpose of getting fresh ornamental elements. The drawings from which they were taken will be found on Plate XXV. Figs. 1, 2, 3, 4, 5, and 6, Plate XXIV. are simple analytic lines taken from the corresponding figures on Plate XXV. Figs. 7, 8, 9, 10, and 12, Plate XXIV.,

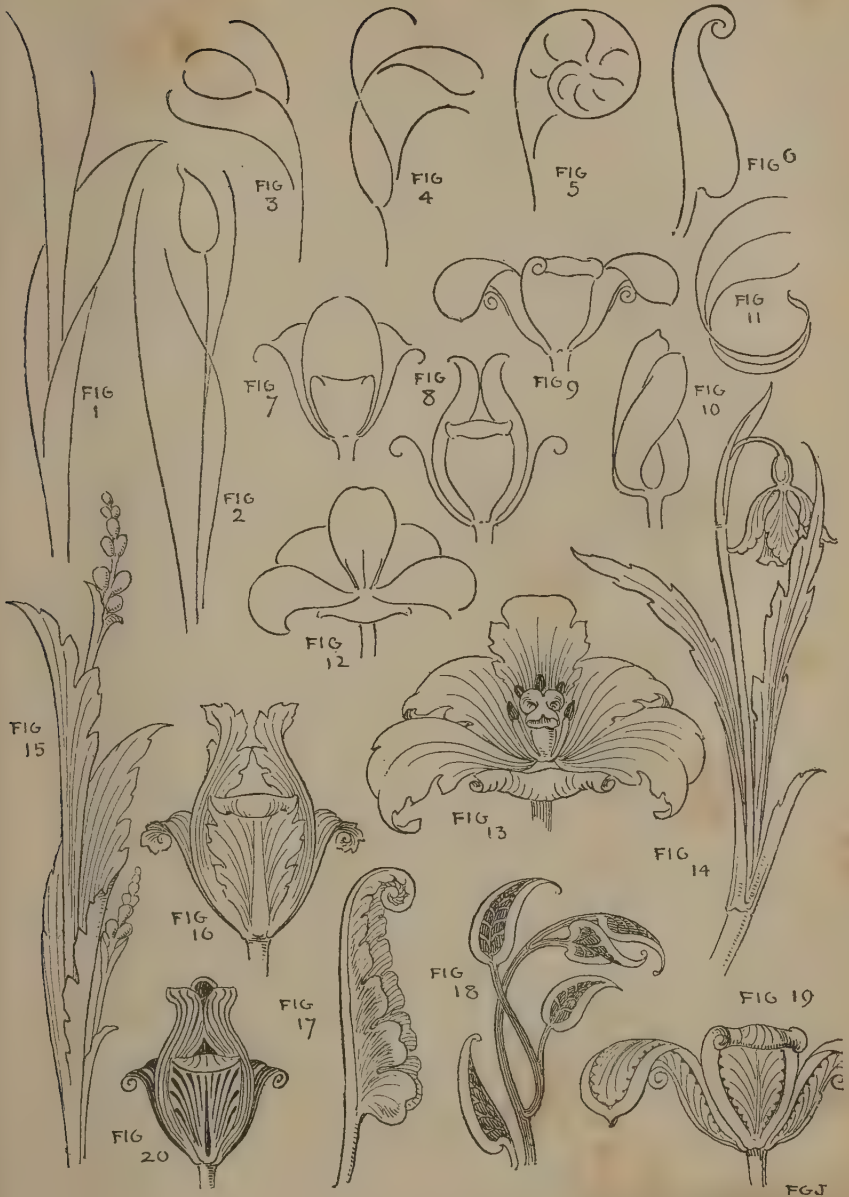
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FIG 20
FGJ

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FIG 15
FIG 13
FIG 10
FIG 9
FIG 16
FIG 17
FIG 12
FIG 14
FIG 18
FGJ

show abstracted lines and forms from Figs. 9, 12, 13, 16, and 17, Plate XXV., which, with others, were drawn from the same tulip flower in the various stages of its growth. Figs. 13 to 20, Plate XXIV., demonstrate the method of dealing with abstracted forms in building up new ornamental details; Figs. 13 to 17 by simple serration of edges, and in Figs. 18, 19, and 20 by the superposition of tones and lines, resulting in the production of varied elements suitable for use in designs of a conventional type.

The lower part of Plate XXIII. is occupied with examples of patterns based upon lines abstracted from cloud and wave forms. Fig. 9 shows a sketch from nature, and Fig. 10 its ornamental interpretation. Fig. 13 is a drawing from nature of waves breaking upon the shore, and Figs. 11 and 12 give ornamental treatments of the same. In Fig. 14 are shown cloud forms from a Japanese book.

Again, leaves in their various stages of development, from the bud state to their final expansion, together with their surface decoration by veining, superposition of tone and colour, and the shapes of their margins, offer to the ornamentist abundant hints and suggestions. The purity of form and line observable in early plant life, the graceful lines of the tender branches, and the exquisite shapes of leaf-buds, should command attention

and careful study. A patient investigation of bud forms alone, in early Spring-time, would amply repay the student, for many a hidden delight would be revealed to him. On Plate XXVI. are given a few studies of early leaf-buds. Fig. 1 is the lilac. Fig. 2 is from the sycamore, and in it are shown different stages in the growth of the buds; the graceful way in which the lower one leaves the stem, and the composition of line it displays, is worthy of particular notice. Further developments of the buds of the sycamore are shown in Figs. 8, 9, 10, and 11. Attention should be given in Fig. 9 to the termination of the upper scale of the bud envelope, which is foliated, resembling a sculptured finial. Figs. 3, 4, 5, 6, and 7 are buds of the horse-chestnut in various degrees of development. They are characterised by a sturdy and vigorous growth, and the forms composing the envelope have very pronounced shapes. Figs. 12, 13, 14, and 15 were sketched from the buds of the ash-tree.

While leaves, and the forms of leaf-buds, may have been less regarded than their quiet beauty justifies, the same cannot be said of flowers. Their brilliancy has caused them to be universally admired, and as a consequence they are largely used as an element in ornamental art of all styles. They are more pronounced in styles of a naturalistic character, but modified in what are usually considered conventional styles, such, for instance,

FIG 1
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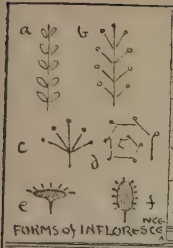
EGJ

as the Greek and Roman. In these styles but little use has been made of positive forms of flowers, and the reason is not far to seek. Anything approaching a naturalistic rendering of them would ill accord with the conventional lines prevailing in classic ornament; and so we find that the terminations to scrolls consist for the most part of groups of leaves disposed in a multi-symmetrical or bi-symmetrical manner, on the *principles* observed in flowers. In modern practice the *results* of the classic method have been adopted, and few attempts appear to have been made to further develop the application of similar *principles* to those which animated the work of ancient times, although the book of nature is still open as of yore. Glance down the pages of any illustrated book on elementary botany, and note the various orders of inflorescence; and it must strike any thoughtful student in search of ideas and principles how many suggestions are here presented, all of which, if utilised in the same way as was done by the old masters, would lead to good results. For example, take the simplest form of inflorescence, the spike (*see* small diagram *a* on Plate XXVII.), and adapt it. Taking its principle of growth, and not any individual specimen, we have a termination perfectly consistent with the scroll, while it harmonises well with the longitudinal character of the border pattern (*see* Fig. 1, same



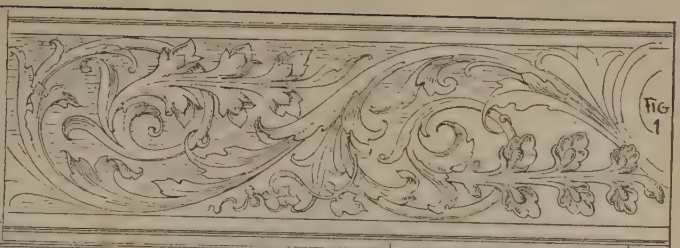


FIG 2

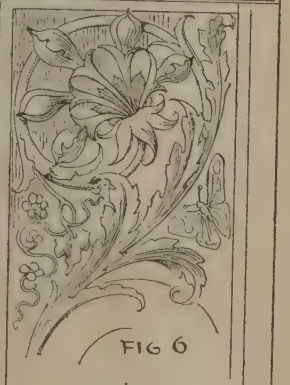


FIG 6

FIG 4

FIG 5

plate). On again taking the capitulum and merely adopting the *principle*, which is the placing of a number of flowers on a disc or head, as diagram *b*, it will admirably compose with the spiral lines of the scroll (Plate XXVII., Fig. 2). Fig. 3 shows the application of the principle of an unfolding leaf-bud to the finish of a scroll; Fig. 4, the ornamental expression of the principle of the glomerule (diagram *f*); Fig. 5, the application of the principle of the scorpioid (diagram *d*) to a wave line pattern. In Fig. 6 is shown a scroll termination based upon the umbel (diagram *c*). Fig. 7 is a diaper arranged on the lines of the umbel and scorpioid. Flowers being the crowning glory of plants, and as they are mostly made conspicuous by their distinct colouring, it is essential that they should have some emphasis, whether expressed by line, space, or mass. The purpose of plant life is the production of fruit and seeds, whereby they are propagated. The forms which carry the seeds assume a variety of shapes, and are suitable to the needs of the decorator. Very many require but little adaptation, as their forms are more set and regular than is the case with flowers and leaves. On Plate XXVIII. are given examples.

Figs. 1 and 2 are the seed vessels of the nasturtium, and Figs. 3, 4, and 5 give the different forms assumed by that interesting plant, "love-in-a-mist." Fig. 6

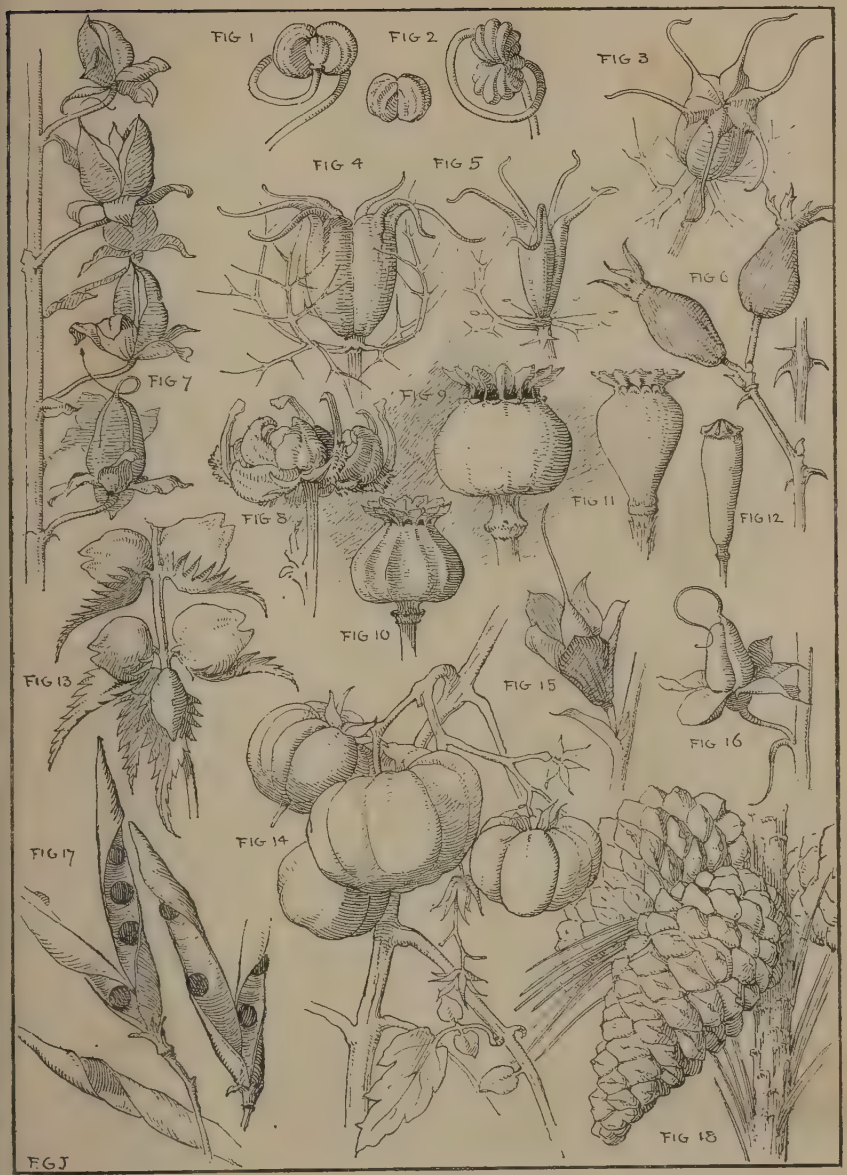

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FIG 18
FGJ

presents front forms of the wild rose. Figs. 7, 15, and 16 show the seed vessels and appendages of the fox-glove. Fig. 8 is the seed receptacle of the common garden marigold, which is at once a quaint and suggestive form. In Figs. 9, 10, 11, and 12 are given the "heads" of different kinds of poppies, and Fig. 14 shows the fruit of the tomato—a useful form for bold decoration. In Fig. 17 are given sketches of the fruit of the sweet pea. The ornamental lines, which the envelopes present when they liberate the seeds, are generally of a very attractive character; and the study of them will furnish many a decorative hint. Fig. 18 shows the cone of the fir-tree—a bold form richly ornamented. It is a natural example of decoration by oblique striping, and in this respect offers a contrast to the vertical divisions seen in such forms as the tomato, poppy, "love-in-a-mist," etc.

Algæ, or sea-weeds, furnish abundant ornamental material, and should not be neglected, for an investigation of their varieties will well repay the trouble of search and research. For designs of a nautical character their use is obvious enough, but their employment need not be restricted to any special purpose any more than other forms of vegetable life. *See* Plate XXIX., on which are drawn some sea-weeds having decorative possibilities of decided character. At the bottom of the

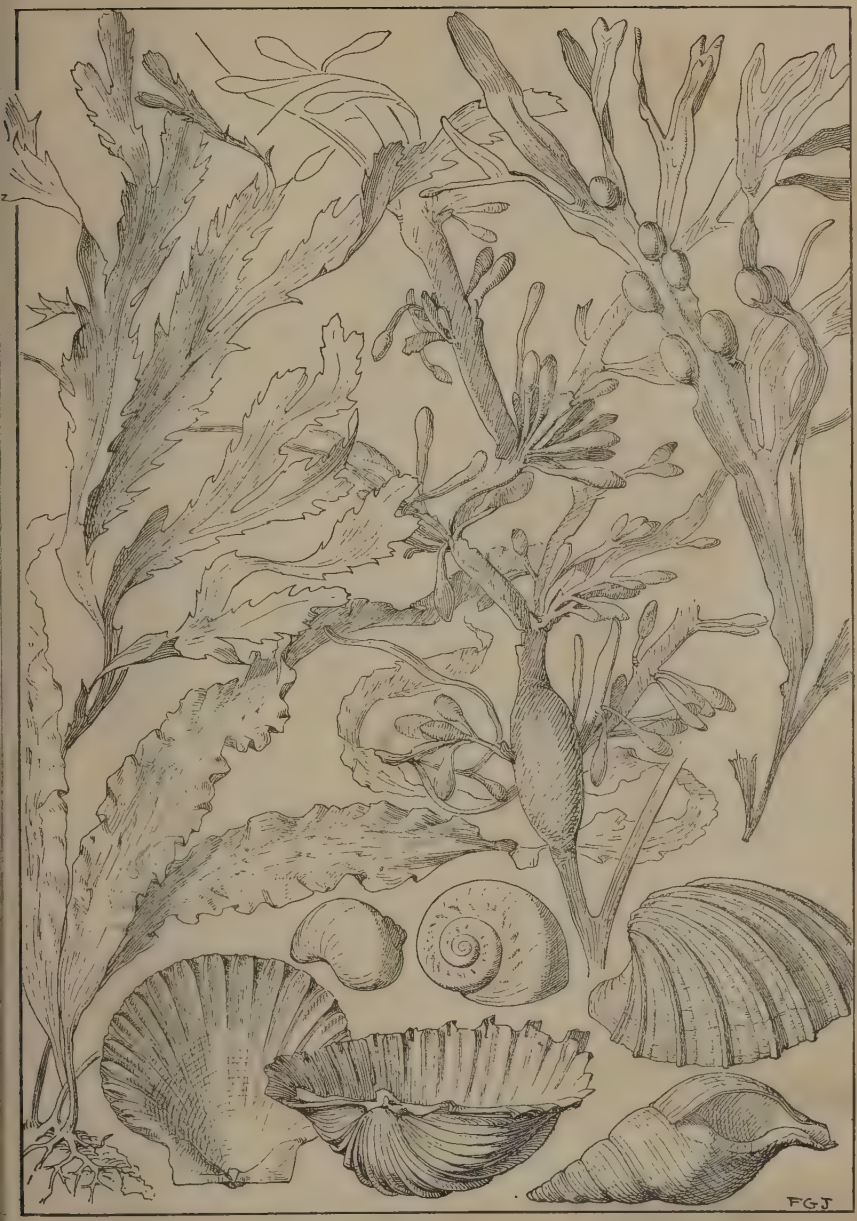
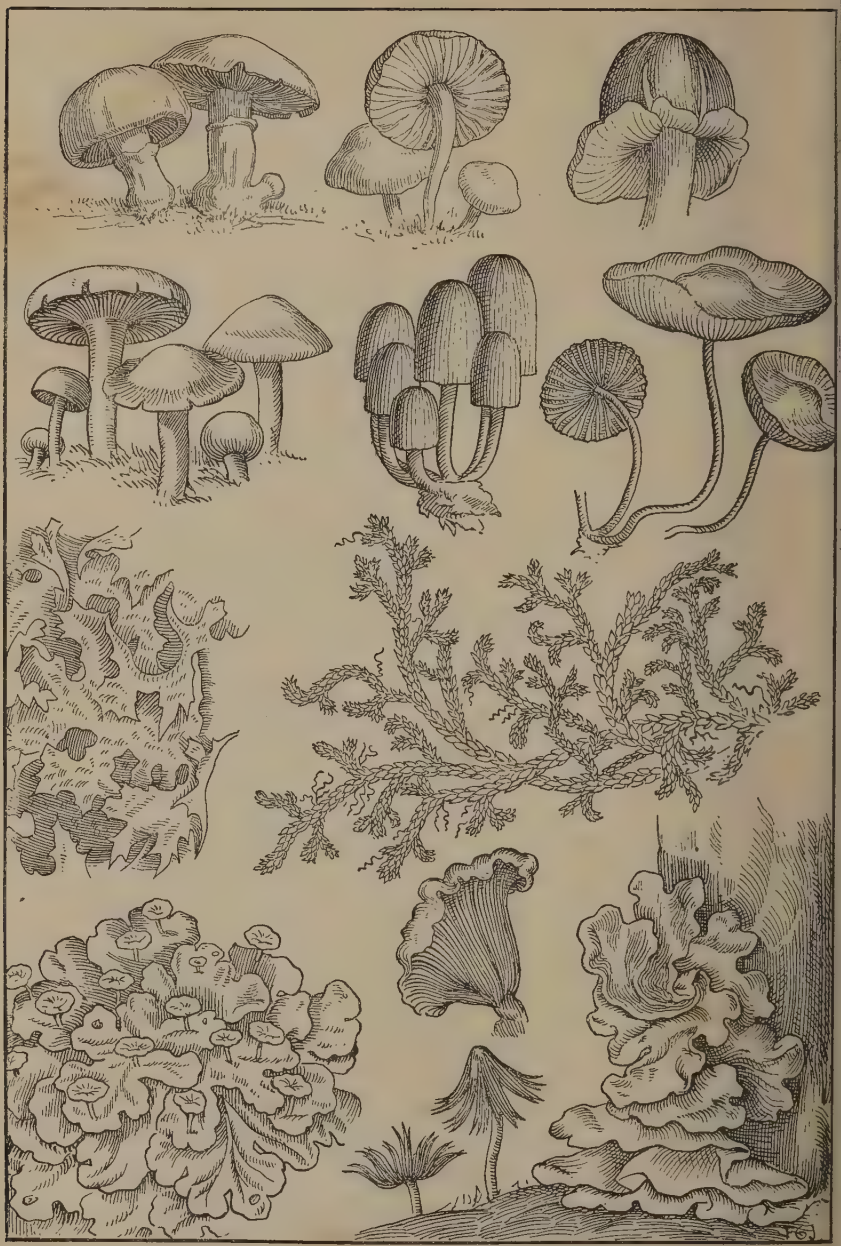

F.G.J

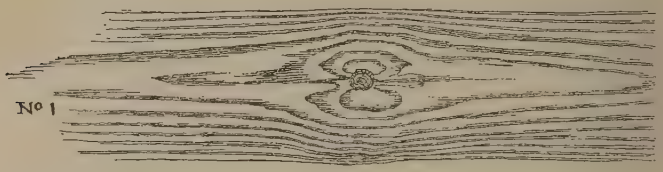
PLATE XXX.



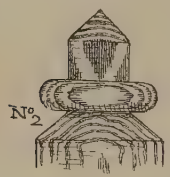
same plate are sketched a few selected examples of shells as suggestive forms for ornament. Fungi and mosses should be studied, as they also have great decorative value. On Plate XXX. are shown some varieties, principally drawn from examples appearing in Gérard's "Herbal." The infinite variety of line in the natural grouping and in the shapes of fungi, render them attractive to the eye of the decorator; while the rich convolutions and continuity of the repetitions in mosses are of nearly equal interest, and their suitability to serve the purposes of backgrounds to plants of higher organisation is at once obvious and suggestive. Again, regarding ferns, it is quite worth the student's while to carefully examine the spores and the way they are disposed on the undersides of the fronds, not only on account of the many beautiful forms examination will disclose, but for the lessons he will receive in surface enrichment by superposition of detail and the varied distribution of masses. On Plate XXXI. are given some drawings made from ferns while under the microscope, showing the various orders in which these curious seed vessels are arranged in spots, groups, and stripes. Lower down on the plate some sketches are given as hints of the way these arrangements may be utilised.

The veining seen in the cut timber of trees may profitably arrest the attention of the student of design,

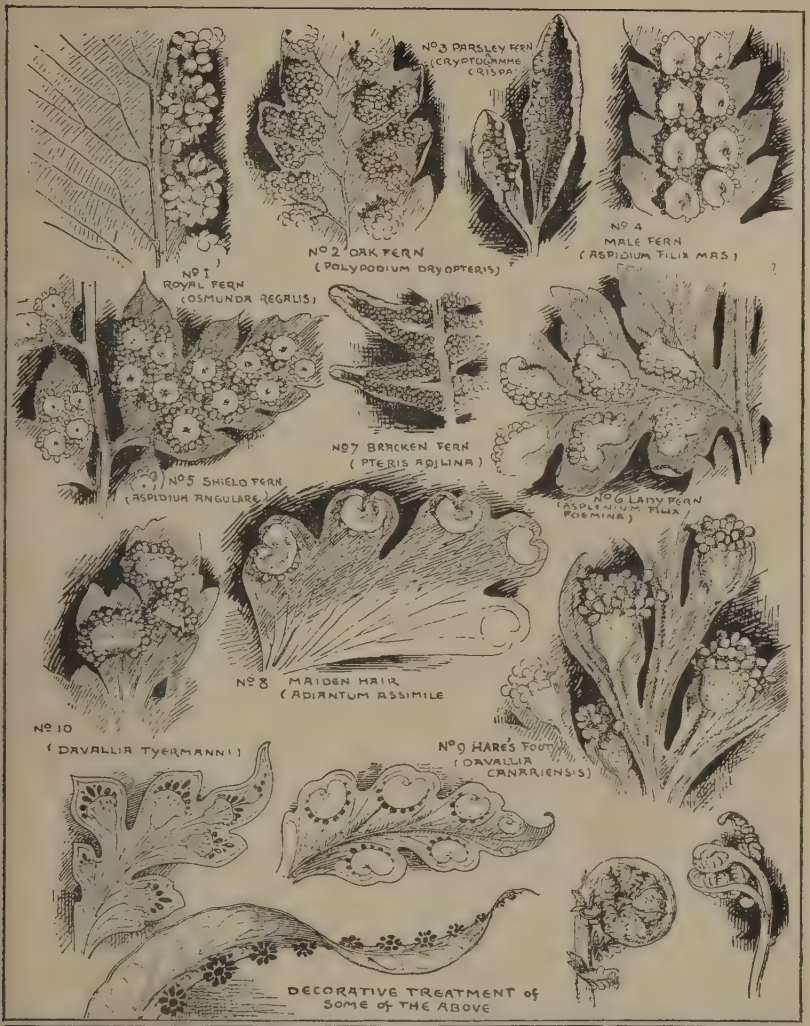
not for the purposes of imitation, like house decorators' "graining," but for the sake of the beauty of individual lines and their harmonious arrangement. Illustrations of this kind of natural decoration are here given. No. 1



is from a plank of pitch-pine. No. 2 is a finial from a piece of carpenter's work, in the same wood, in which the lines of the grain fall in with the form, and result in a quaint kind of decoration, reminding one somewhat of savage ornamentation. No. 3 is taken from a moulding occurring



on a piece of furniture made of birchwood. Here the lines flow from the concave to the convex, as if designed specially for the purpose. The headpiece to Chapter II. is a design based upon wood-graining. Plants may be


No 1
ROYAL FERN
(OSMUNDA REGALIS)
No 2 OAK FERN
(POLYPODIUM DRYOPTERIS)
No 3 PARSLEY FERN
(CRYPTOGRAMME CRISPA)
No 4
MALE FERN
(ASPIDIUM FILIX MAS)
No 5 SHIELD FERN
(ASPIDIUM ANGULARE)
No 7 BRACKEN FERN
(PTERIS AQUILINA)
No 6 LADY FERN
(ASPLENIUM FOEMINA)
No 8 MAIDEN HAIR
(ADIANTUM ASSIMILE
No 10
(DAVALLIA TYERMANNI)
No 9 HARE'S FOOT
(DAVALLIA CANARIENSIS)
DECORATIVE TREATMENT of
SOME of the ABOVE

used in any of the modes indicated in Chapter I.—*i.e.*, either by "chequering," "diapering," or "striping," etc., or in any other geometrical order. To adapt them, however, to such lines as the wave, spiral, festoon, or scroll, harmony between the details and the basis of the ornament must be preserved; and this may be secured in two different ways — either by a careful selection of those plants whose natural growths will easily conform to them, or by a process of abstraction, using them for the creation of detail, so that in combining the natural with the conventional there may be no appearance of copied nature allied with unnatural lines. By the latter method has the so-called acanthus scroll and foliage been generated.

In the "Lessons on Decorative Design," the development of this class of foliage, as far as the Gothic period, has been dealt with; and it will only be necessary here to point out that the Renaissance style which followed, revived the classic forms, infused into them renewed vigour, but in turn suffered decadence. On Plate XXXII. will be found a few selected examples of historic art which illustrate this. Fig. 1, from Italian carved work of the sixteenth century, shows distinctly a revival of the antique—not a mere reproduction, but a development on classic lines and methods. The leading lines of this design flow with grace and in melodious order; the

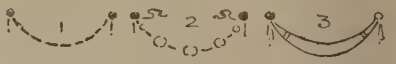
FIG. 1
FIG. 3
FIG. 2
FIG. 4
FIG. 5
FIG. 6
FIG. 7

details clothing them are carefully thought out, and so disposed as to relieve any monotony of direction by arresting the attention with various pleasing forms. The foliage from which the ornament starts is strong and vigorous, and the free terminations of the scrolls have a delicate grace. Notwithstanding the so-called conventionality of the composition, it forcibly brings to our remembrance the lovely leaf-edges and beautiful bud forms which abound in natural growths. The whole effect of this example is beautiful because of the truth on which it is based, and its consistency throughout is equal to its beauty. Towards the end of the sixteenth century, however, from various causes, chiefly dexterity of hand and less frequent reference to nature, signs of decadence began to show themselves; the crispness and other characteristics of natural foliage were less and less expressed, and the points of the leaves ran into weak-looking curves, and the vigour, which was such a marked feature of cinque-cento work, was ultimately lost. In the seventeenth and eighteenth centuries the degradation of a noble detail is still more apparent, and it, in common with other ornamental elements, suffered in a marked degree. The squareness of treatment was given up, the points of the leaves became attenuated and twisted, while the general design betrayed carelessness in composition. On reference to Figs. 2 and 6 it will be seen

that effect, rather than beauty, was the aim of the artists of these periods, and such effect as could be obtained by the use of violent contrasts of line, form, and light and shade. To such an extent was this carried, that in the last phase of the style, the "Rococo," the foliage lost all character, and consisted of mere bundles of unmeaning curves (*see* Fig. 7). Fortunately, at a still later period, a revulsion took place in favour of a better form of art; a revulsion brought about by the discoveries of ancient Greco-Roman decoration at Pompeii. This led to the formation of the style known in France by the name of "Louis Seize" (Figs. 4 and 5), and in this country as the "Adams style." Although this was an attempt to bring forward a more classic style of design, yet it was classic with a difference, for the previous styles were not forgotten, and their remembrance influenced the practice of the newer form of art. One result is to be seen in the thin and somewhat attenuated foliage, as in Fig. 4. This change for the better did not check the employment of the over-free and rollicking style of the "Rococo," which long survived; and the great Exhibition of 1851 demonstrated its existence as a favourite style for all classes of industrial art.

The festoon, which consists of the decoration of the catenary, or swag, with floral details, has been largely used in decorative art, and is useful for obtaining

contrasting lines or for the purpose of securing unity in a design. The fully developed festoons are composed of two start-points, from which they hang, and of sheaths, out of which issue the fruit, flowers, and leaves; these generally increasing in bulk towards the central or lowest part, thus: Their treatment should vary according to the character of the design or composition into which they enter, whether light, fanciful, dignified, or severe.

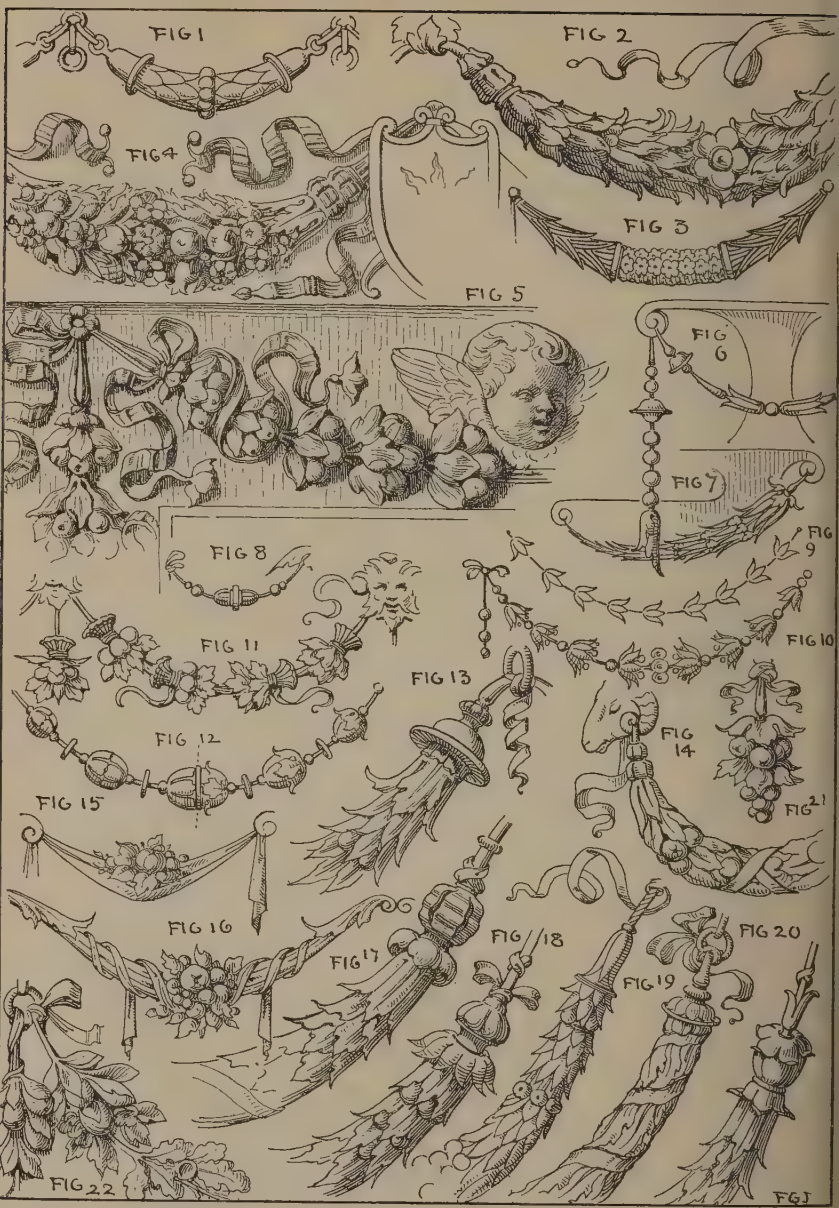
The historic records of art show that the swag, or festoon, is based upon three simple types, more or less involving the catenary curve. The first is like a simple 

hanging cord or chain, having the same weight throughout its entire course; the second is like a necklace, the details being arranged in bunches; the third, thicker in the middle and graduating upwards, somewhat resembles a piece of hanging drapery. The order of development, from the simplest form of festoon to the richest, appears to have been: first the elaboration of the parts near the points of suspension by the addition of some purely inventive shapes, and by the arrangement of the ribbons on which the details of the swag are strung; and then the marking of the central and lower part of the curve by some pronounced feature. Festoons arranged

strictly according to the first type can never be quite satisfactory in themselves, because of the want of gradation, though they may serve special purposes. It will be found that when they are based on the third type, whether made continuous or interrupted — *i.e.*, when the details are composed in graduated quantities— their design will be of a brighter quality. The festoon is undoubtedly of festal origin. The stringing together of fruits and flowers with ribbons and draperies for the adornment of buildings on joyous occasions, whether secular or religious, would be the readiest and most natural form of decoration for the purpose, and appears to have been indulged in from very early times.

The beauty of the lines into which these extemporaneous decorations naturally fell struck the eyes of artistic folk; who, taking advantage of the suggestions presented, were led to construct ornaments from them, but in a more enduring form, in painting and carving. On Plate XXXIII. is given a variety of examples, showing various treatments of this ornament from the simplest form to the most ornate. Fig. 9, from the Greco-Roman, is a simple one, based upon the first type previously alluded to, in which the elements composing it are repeated in one direction and without gradation. Fig. 10, belonging to the same style, is a festoon of more complete form; the details graduating from the points of suspension

PLATE XXXIII.



towards the centre, which is well marked. Fig. 3, also Greco-Roman, is a compact and severe form. Fig. 14, a Roman sculptured example, is heavy and compact in construction ; the ribbon with which the leaves and fruits are tied together becomes a feature in the design ; bows of ribbon form the start-points, and the middle of the festoon is accented by the crossing of this material. Fig. 7 is an early Italian specimen, in which the details graduate in one direction only. Fig. 1 is also an Italian example, possessing all the essentials of a festoon, but very simple in form. Fig. 2 is a richer example of Italian work of the sixteenth century. Fig. 4, another from the same source, is made still richer by the use of a greater variety of detail and a further elaboration of the ribbon Fig. 5 is a somewhat later example, and is arranged upon the second type ; the ends of the ribbon being prolonged and made to play a greater part in the composition. Figs. 11 and 12 are simple forms based on the same type, the one incorporating naturalistic details, the other conventional ones. Figs. 15 and 16 are taken from late French Renaissance, and show the use of drapery with natural group of fruit and leaves. Figs. 13, 17, 18, 19, 20, and 21, mostly Italian, are given to show the varied treatment of the parts next to the points of suspension, by the use of ribbon, floral, and architectural forms.

CHAPTER VIII.

ANIMAL ELEMENTS.

IN the second sub-division of natural elements we have those derived from animate nature, such as quadrupeds, birds, fish, reptiles, and insects. These have always been largely used in ornamental art in a more or less naturalistic manner. The fact that animate forms are more difficult to treat ornamentally than inanimate ones, did not deter the old artists from their use; on the contrary, they grappled with the difficulties because they were fully alive to the increased interest that animal forms would give to their compositions. In prehistoric art instances occur of their employment in connection with the interlaced ornaments peculiar to those remote periods. In point of fact, the art workers of those times appear to have restricted themselves in

their choice of materials from nature to the use of animals only as ornamental elements, rarely using vegetable forms. The reason for this is to be found in the fact that man in his early condition had an intense interest in those animals which aided him in his struggle for existence, such as the horse, dog, reindeer, etc. His interest is recorded by the addition of their representation to his other ornamental details, and arose from his admiration of their usefulness rather than from any appreciation of their beauty of form. Man's chief business in life then being the provision for natural wants and for his own protection, the liking for any particular object, natural or otherwise, was inspired by fitness of purpose rather than by æsthetic considerations. The hard conditions of his life did not conduce to the awakening of his dormant sense of beauty, and so it is only in the later periods, when an easier state was reached, that he became alive to the beauty prevailing throughout the whole natural world. There is little doubt that symbolism in the early days of historic art led to many of the animal details found in the later epochs, such, for instance, as griffins, dragons, and other grotesques.

In the history of art, it is seen that the formation of any "style" owes much to a preceding one, however much may differ the ruling principles which animate

them. Hence, in the development of an æsthetic ornamental system, details were often borrowed from a symbolic one on account of their artistic merits, and as offering a vehicle for graceful expression. There being no need or intention to set forth any mystical meaning in adopting such forms, the sole attention was directed to emphasizing and refining characteristics which would harmonise with other details of the style.

In Egyptian and Assyrian art, we find the use of composite animals for conveying to the beholder distinct ideas. To put a human head on the body of a lion or bull is, from a matter-of-fact point of view, a monstrous proceeding, but, regarded from a symbolic standpoint, it is perfectly justifiable. To convey the idea of strength and intelligence combined, what better plan could have been adopted than to select a creature having great physical power, and then to give it a human head, which is the symbol of the highest intellectual force in nature? Other forms of composite animals owe their origin to the exercise of the same principle—*i.e.*, by taking the forms of certain creatures, for the sake of their chief characteristics, and combining them with other forms for the expression of a concrete idea. On Plate XXXIV. are given examples of these fabulous animals, creations of art in early times, and upon which the grotesques of later times have

FIG 1
ASSYRIAN BULL
& SACRED
PALMETTE
RAM
SPHINX
FIG 2
GRIFFIN
CHIMÆRA
PHŒNIX
DRAGON
NATURAL
DRAGON
WINGED
SEA HORSE
HIPPOCAMPUS
PEGASUS
SEA HORSE
DOLPHIN
NATURAL DOLPHIN

been founded. Some of these may be thus explained: The griffin, composed of the body of a lion, head of a bird, and wings, is regarded as a symbol of watchfulness. The qualities which contribute to this idea of watchfulness, are strength, alertness, and swiftness. Alertness is accented by the forward position of the ears, as if to catch the slightest sound of approaching danger. The griffin was often used by the Greeks for adorning the acroteria of the pediment of their temples, and is appropriately used in modern times to crown the piers of gateways to mansions and public buildings. The wyvern is a winged serpent, with bird's head and legs, and has the same symbolic meaning, although other qualities are added; such as subtlety and wisdom, indicated by the serpent body, and alertness in hours of darkness, by the bat-like form of the wings.

The chimæra is a monster combining the forms of lion, goat, and serpent, from whose mouth issue flames, typifying a volcanic mountain in Greece. The reason for the combination of the creatures is thus given: the top of the mountain was the resort of lions; the middle, of goats; while the foot of it was infested with venomous snakes. Hence it became the symbol of terror and devastation. The dragon, a winged reptile, was an early emblem of the evil forces of the natural and moral world. It combines in its formation the terror-inspiring

character of the lizard and serpent, and the swiftness of action which belongs to creatures possessing wings. To intensify its potency for evil, it is often represented as belching forth flames of fire. By some writers it is thought that the root from which the name is derived points to the probability of the term having been applied to meteors or shooting stars, which, in early times, were regarded as potents of disaster and evil. A sketch is given of the natural dragon, so named from its resemblance to the fabulous creature. The phœnix, a female bird of very beautiful plumage, is supposed, after a life of some hundreds of years, to have built for herself a funeral pile, which with her wings she fanned into flames and was consumed, but afterwards rose from the ashes in all the freshness of youth. This is the accepted symbol of resurrection and immortality. Pegasus, or winged horse, is the adopted symbol of poetical aspiration, from the supposition that it had been in the service of the Muses. Besides this winged horse of the land, we have sea-horses, with and without wings, used as emblems of the watery element, which are generally associated with Poseidon, or Neptune, and the Nereids. The sea-horse, partly horse and partly fish, has fishy appendages affixed to the forepart, at the elbow, and at the extremities of the limbs; and the wings, when added, become fin-like in character, and may be regarded as

developments of the pectoral fins of fishes. The name hippocampus is applied to the sea-horse; the same term is used to designate a curious little creature, of which a sketch is given. Below the latter examples are drawings of the dolphin in nature and art, to show the points of difference and agreement between them. Fig. 1 on the same Plate is a prehistoric example of the use of a bird form appropriately applied to indicate the progress of the sun through the heavens. Fig. 2 is an early Celtic illustration of the termination of tracery or interlacing with animal forms. The free and varied growths of plants, with their multitudinous repetition of parts, enable the ornamentist to easily adapt them to his requirements without violence to their nature.

But in the case of animal forms it is different; the prescribed number of parts belonging to their organisation must be regarded, and thus a narrower limit accompanies their employment, presenting difficulties in the way of successful adaptation that are not met with in dealing with vegetable nature; difficulties which are greater or less, according to their biological rank.

To successfully combine natural forms with purely ornamental lines it is necessary that we should analyse them, in order to ascertain the general flow of line that exists in their composition, and thus to secure harmony

in the combination. If this is necessary in adapting plants, how much more important it must be when using animal forms! It is quite possible to carefully and accurately draw an animal form, and yet it may be totally unfit for a decorative purpose; while it is possible to have a less accurate representation which may have high decorative quality, for the reason that the first may be wanting in composition and continuity of line, while in the latter these may be preserved and emphasized. It is for these reasons that some animal forms found in barbaric ornament are so often ornamentally true, while their accuracy, from a realistic point of view, is defective.

Besides the inclusion of animals in decoration we have the amalgamation of animal forms with ornament. This practice, dating from prehistoric times, has survived in modern art, and to some extent explains the continuance of this method of treating animated nature. Other reasons will be given, when considering the highest organic form, the human figure, in our last division of natural elements. Birds are particularly useful in adding variety and interest to ornamental compositions. They are graceful in themselves, and associate well and pleasantly with ornament based upon vegetable nature. In scroll work, while their general shapes may flow in with the lines of the ornament, the variety of action

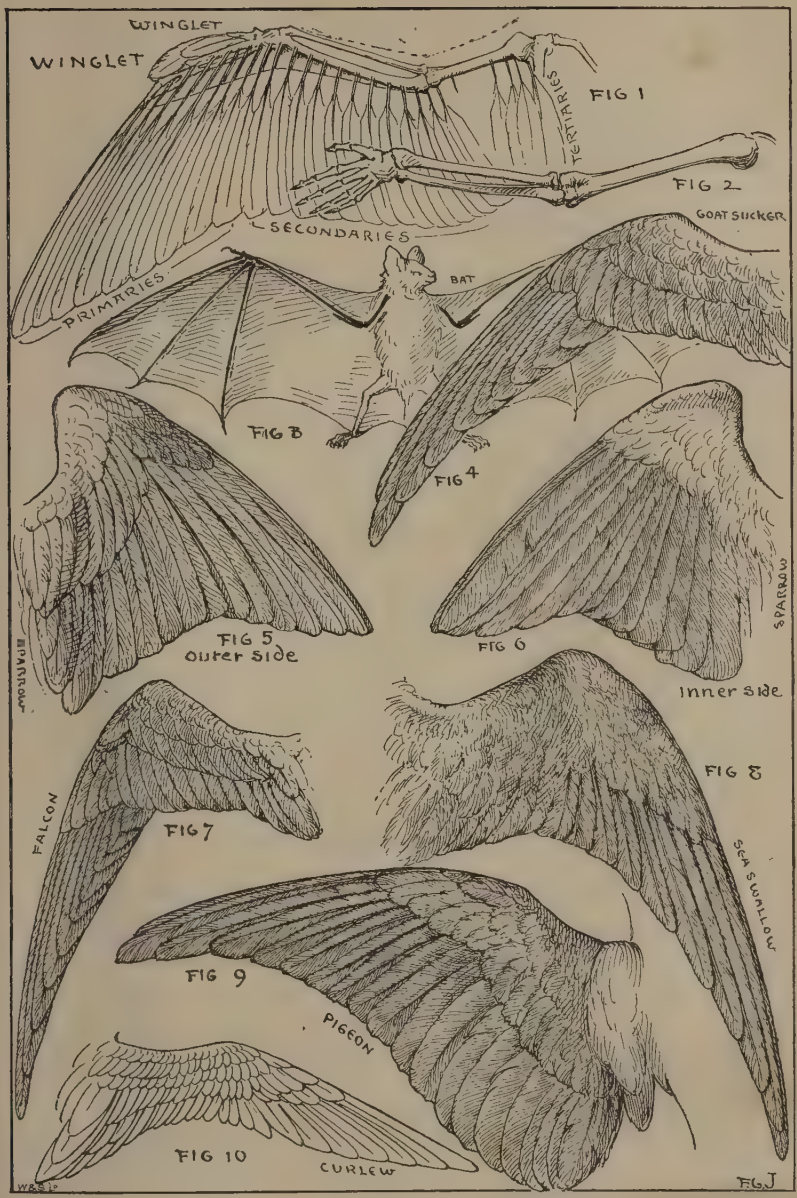
offers opportunities for adding contrast and giving brilliancy and force, relieving the tendency to monotony from the use of oft-recurring curves.

On Plate XXXV. are given a few examples of the ornamental treatment of quadrupeds and birds. Fig. 1, a dog in the act of running after a bird, is adapted to undulating lines clothed with foliage; and in Fig. 1*a* are given the analytic lines which regulate the composition. Figs. 2 and 3 are examples, from sixteenth century Italian stone carving, of the adaptation of bird forms to ornamental foliage, and Figs. 2*b* and 3*c* show the lines which form the bases of the designs. Fig. 4 is an arrangement of birds and conventional foliage taken from Indian wood carving. It is rather severe in treatment, but the whole pattern is well disposed. Fig. 4*d* gives the abstracted lines devoid of details. Figs. 5 and 6 are sketches from nature, and Figs. 5*e* and 6*f* respectively show the ornamental lines that are to be found in them, and which should be studied when adapting these elements to ornamental purposes. Fig. 7 is a sketch of a dog, given to illustrate the arrangement of the parts of the limbs, which differ from those of human beings; the extremities consisting of an elongation of the bones of the hand and foot. This figure further illustrates the place from which wings should start, if required—*i.e.*, from the spine of the

FIG 3 (c)
FIG 1 (a)
FIG 2 (b)
FIG 1
FIG 2
FIG 3
FIG 4 (d)
FIG 4
FIG 5
FIG 5 (e)
FIG 7
FIG (6)
FIG 8
FIG 6 (f)
FIG 9
W & S. L.
FGJ

scapular or blade-bone. In Fig. 8 we have the adaptation of a deer to an oblong panel.

Supplemental to this Plate are given drawings of wings and wing structure. On Plate XXXVI., Fig. 1 shows a wing stripped of the coverts, revealing the bony structure. By comparing this with the drawing of the human arm, Fig. 2, it will be seen that it is a similar structure, but specially adapted by readjustment of parts to the purposes of flight through the air. From what answers to the wrist and fingers of the human limb proceed the long or primary feathers; to the underside of the forearm are attached the next important feathers —the secondaries; while the humerus, or upper arm, carries the tertiaries, and to the thumb are attached some small feathers forming what is called the winglet. Fig. 3 shows the structure of the wing of a bat. Here there is a different arrangement, but again it will be seen that it is an adapted arm; in this case, the substitution of a thin membrane for the feathers favours noiseless flight. The forearm is extended, and the fingers lengthened; and the thumb is developed into a hook, by which the creature suspends itself when at rest. The wings of birds are various in shape, though agreeing with a general form, which, however, differs materially from that of bats. The varieties result from the development of parts


WINGLET
WINGLET
TERTIARIES
FIG 1
FIG 2
SECONDARIES
PRIMARIES
GOAT SUCKER
BAT
FIG 3
FIG 4
SPARROW
FIG 5
outer side
FIG 6
inner side
FIG 8
FALCON
FIG 7
SEA SWALLOW
FIG 9
PIGEON
FIG 10
CURLEW
FIG J

according to the nature of these aërial creatures. A wing of rounded form, especially if allied with concavity on its inner surface, is not conducive to high or rapid flight, as in the case of the barn-door fowl. The wings of the sparrow (*see* Figs. 5 and 6) are more pointed and less concave, and therefore are better suited to sustained and rapid progression through the air. Wings of birds that have great rapidity of flight are very much pointed, as the goat-sucker, falcon, sea-swallow, pigeon, and curlew.

On Plate XXXVII., Figs. 4, 7, 8, 9, and 10, will be found some historic examples of the ornamental treatment of wings, and their application to animal forms, etc. It will be seen in Fig. 1 that in the Egyptian "winged globe," the emblem of deity, the feathers of the wings are rendered in strict accordance with the severity that characterises that style of art. Notwithstanding this diagrammatic treatment, the idea of wings as regards the arrangement of feathers is well preserved, while the all-encompassing nature of this symbolic attribute of the Deity is beautifully and effectively expressed. It is altogether much finer in conception than the similar Assyrian emblem shown at Fig. 3. Fig. 2, given as an example of the way in which symbols are oftentimes rendered in purely æsthetic styles of ornament, is taken from Italian art of the sixteenth

FIG 1
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FIG 12
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FIG 13
FIG 16
FIG 15
FIG 17
FIG 18
FIG 19

century. Here the general *form* only of the Egyptian symbol is regarded, the globe is transformed into a shell, and the wings are naturalistically treated. The whole composition is a mere piece of eye-pleasing ornament, having no symbolic meaning whatever. Fig. 5 shows the application of wings to the Greek sphinx—one of the attributes which distinguish it from the Egyptian creature bearing the same name. Fig. 13 shows an ingenious conventional treatment of the wings of a bird taken from a fifteenth century textile. Figs. 11, 12, and 14—19 are illustrations of various wing treatments. Fig. 11 is from stained glass. Fig. 12 was taken from a carved wooden panel of the sixteenth century, and Fig. 14 from the base of a bronze candelabrum. Fig. 15 is an illustration borrowed from a painting by Holbein, Fig. 16 from a ceiling decoration by Perugino; while Figs. 17 and 18 are from modern book illustrations, and Fig. 19 is a sketch from a painting by one of the old masters.

Besides the structure of wings, the decorative character of the plumage of birds should engage the attention of students of design, not only for the beautiful colouring and detail, but for the hints to be obtained for setting out ornament. The forms and arrangements of spots and stripes are almost infinite in their variety. On Plate XXXVIII. are given some examples of feathers with

FIG 20
FIG 21
FIG 22
FIG 1
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FIG 5
FIG 6
FIG 23
FIG 24
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FIG 8
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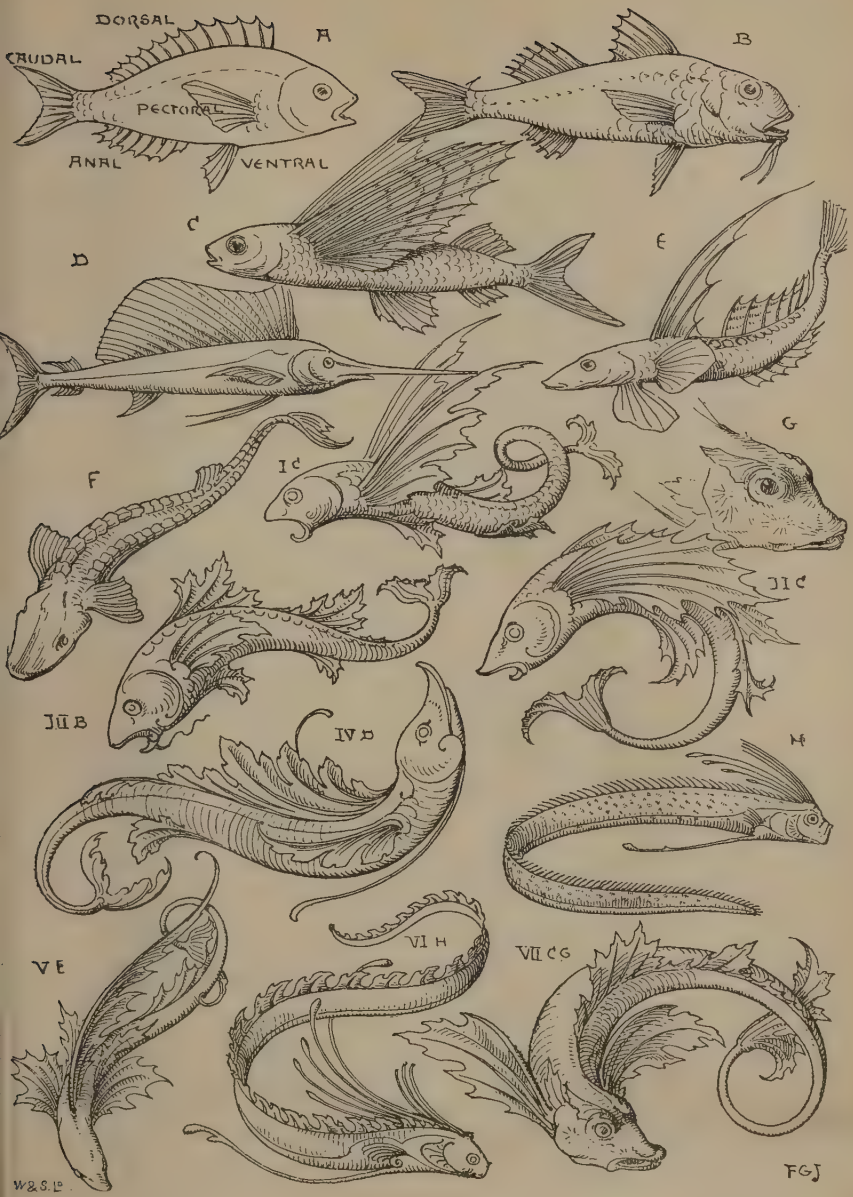
FIG 12
FIG 13
FIG 14
FIG 17
FIG 18
FIG 19
FIG 15
FIG 16

ornaments suggested by their markings. Figs. 1 and 2 are peacocks' feathers in different stages of development, and Figs. 8, 11, and 16 are ornaments based upon them. At Figs. 3, 4, 5, and 6 are shown some pheasants' feathers exhibiting various arrangements of spots and stripes. Figs. 9, 10, 12, and 13 are simple patterns designed upon the general forms and upon the principles of distribution seen in the natural markings. Fig. 9 follows the lines of Fig. 3, Fig. 10 those of Fig. 6, Fig. 12 those of Fig. 4, and Fig. 13 those of Fig. 5.

Insects have decorative value; and, although they may not so easily as birds lend themselves to composition of line, yet may be effectively used as spots in a design when contrast is desired. Their shapes are suggestive, while the markings on the wings of some, such as butterflies and moths, afford excellent examples of surface treatment. On Plate XXXVIII., Fig. 7, is shown the application of the marking of a butterfly's wing, given at Fig. 24, to an ornamental repeated pattern.* The insect, Fig. 17, is translated into an

* Decoration which mainly consists of the adaptation of natural markings such as are seen on the skins of animals, butterflies' wings, feathers of birds, and in the graining of woods, etc., is sometimes classed as naturalistic. This term applies to another kind of naturalistic decoration which concerns itself with the idealising of natural forms, as explained in "Lessons on Decorative Design," page 100.


DORSAL
A
CAUDAL
PECTORAL
ANAL
VENTRAL
B
C
D
E
F
I C
G
II C
III B
IV D
H
V E
VI H
VII C G
W&S.Lᵈ
FGJ

ornament at Fig. 18; and in Fig. 19 is given a diaper based upon a similar form. Fishes and reptiles, again, are a fruitful source of decorative material. Their flexibility renders them easy of adaptation to any purpose required. In using them, however, their general arrangement or structure should be borne in mind, and also the principle upon which nature produces her varieties. On Plate XXXIX. a few typical fish forms are given with their ornamental renderings. A is a sketch of an idealised fish showing the arrangement of means of progression—namely, the fins; the forms of these vary in different kinds of fish. B shows the division of the dorsal fin into two parts. At C we have a large development of the pectoral fins, which have the appearance of wings. The fish shown at D has a divided dorsal fin, the forepart being enormously developed in length and depth. At E is given the representation of a fish with the back fin divided; the front portion is developed in height, while the back part is extended in length. F shows another variety, in which there is a suppression of the fins, especially of the dorsal one. At H we have a curious fish in which the dorsal fin is extended along the whole upper border of the creature; the beginning, at the head developing some graceful appendages. These few examples of natural fish will suffice to show the variety

of lines upon which ornamental fish forms can be constructed, while below are given illustrations of the method adopted in practice. Thus 1C and IIC are two renderings of the natural type marked C; and so on. Snakes and lizards are also useful for decorative purposes, in introducing an element of playfulness, and in relieving the seriousness of constructive composition by their graceful forms and the variety of ornamental lines that they naturally take. On turning back to Plate XXXVIII. the reader will find, in Figs. 20 and 21, examples of snake and lizard taken from a Japanese book on natural history. Serpents have always been favourite forms with designers of all periods. Figs. 22 and 23 show a modern and an antique use of these creatures; the first is taken from the border of a small tray, the second shows their adaptation to the handle of a vase. Shells again, the product of the lower forms of animal life, have great ornamental value, which is attested by their frequent use in historic art, where they are subject, more or less, to modifications according to the style in which they are found. In fact, it is possible from the treatment of the shell to name the style from which it is taken. Natural shells in many cases require but little adaptation when used in simple schemes of ornament, yet in others they readily lend themselves to amplification and enrichment.

CHAPTER IX.

THE HUMAN FIGURE.

OUR third and last sub-division brings us to the use of the human figure in ornament. The human figure is the highest and noblest of all the elements with which the ornamentist has to deal, and is at the same time the most difficult to treat. In spite of this difficulty, however, we recognise the fact that the interest given by the human figure to any decorative scheme, surpasses that imparted by any other elements, be they what they may; and, parallel with the interest which it excites, is the refining influence which it exerts over the elements associated with it. The study of the human form is of such a nature, that it is impossible to pursue it without benefiting the use of the lower elements of

ornament and raising their general character. In proof of this, examine a piece of good Italian or English Gothic foliage, and compare it with the best obtainable foliage to be found in Asiatic art; and it will be seen at once how tame the latter is by the side of the living creations of the styles first mentioned, in which the study of the figure is so greatly fostered. Nor is this to be wondered at, for the subtlety of line, composition of mass, proportion and balance of parts are so perfectly illustrated in the human form, that it seems as if nature had concentrated all her wealth in this one supreme creation, which presents an epitome of the qualities essential to ornamental art.

In adapting figures to design, it is of the utmost importance that they should harmonise with the flow of the ornament with which they are allied, and with the shape of the space to be filled by them. The mere imitative rendering of the figure is not sufficient for the purpose. Figures so drawn would have the appearance of being "stuck" in the composition, instead of forming an integral part of the whole. To deal successfully, therefore, with the figure as an ornamental element, the student must not depend on merely copying his model, but must idealise by every possible means,—by analysis, and by searching after the ornamental lines which are to be found in the human structure. The study of anatomy

will to some extent be a help, but should not be relied upon altogether; as it is the surface forms and lines which concern the ornamentist, and they do not always agree directly with the under structures. Perhaps there is nothing more noticeable in a young student's first attempts in drawing the human figure, than his failure to grasp the continuity and beauty of line on which the unity of the composition of the human form depends, and the general lines upon which its details are built. He does not see, until it is pointed out, that, in the case of a figure standing with the weight upon one leg, as in Plate XL., Figs. I., II., and V., there is a general and controlling line running from the pit of the neck to the inner ankle, which brings into unity all the varieties of form in the trunk and lower limbs. Or, again, in drawing the upper and lower limbs, a beginner invariably seizes upon the details of their shapes, and fails to appreciate their values and the general lines which govern their disposition. In the side view of the leg, he would observe that its outline is made up of a series of convex lines; and, dwelling upon these details of form and not comprehending their relative values and their subordination to the shape of the whole limb, would give a result like that shown at Fig. VI., Plate XL. Now, a closer observation would lead him to see that, notwithstanding the convex curves of the shin, the *general*

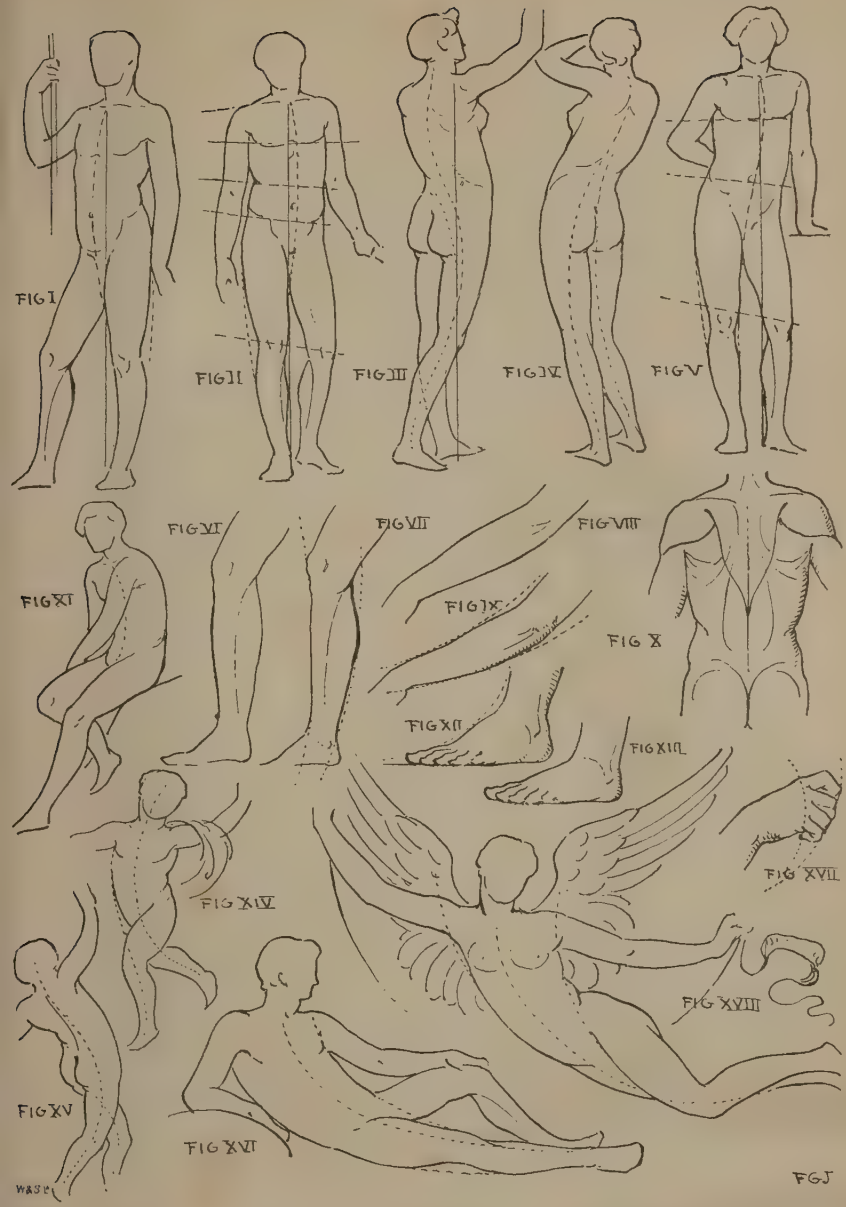


FIG I
FIG II
FIG III
FIG IV
FIG V
FIG VI
FIG VII
FIG VIII
FIG IX
FIG X
FIG XI
FIG XII
FIG XIII
FIG XIV
FIG XV
FIG XVI
FIG XVII
FIG XVIII
FGJ

line of the front of the leg is concave, while that of the back is convex ; regard to which fact, while adding detail, would give the form as Fig. VII. The same with the forearm ; it is often drawn thus : but if the general lines were taken into account, as here shown , a result like this would be given : Another example is given in Figs. VIII. and IX., to which the foregoing remarks apply. Careful analysis of this kind when studying the figure, would not only be a guide to its truthful representation, but would disclose many an instance of subtle composition, confirming and emphasizing the value of the fundamental principles of ornament : continuity and repetition without monotony, variety without pettiness, contrast

without disunion, radiation and symmetry without formality. On the same Plate will be found several examples of the ornamental lines to be traced in figures in different positions. Fig. x. shows the lines of the muscles of the back. Fig. xii. illustrates the composition of the foot with the ground. Fig. xvii. shows the radiation of the lines of the fingers, seen in a partially closed hand.

Let us now consider the direct application of the figure to decorative purposes (1) for the filling of spaces, such as panels, spandrels, and tympanums. Of course the same rules hold good as those laid down for decoration with foliage, but it becomes more difficult, because we may not do with the human figure what we may do with plants; we have to take figures in their entirety, without adding to their structures. To fill a space, therefore, it behoves the student to study well the lines of his elements,—all the movements of which figures are capable, and any accessories that will aid the work of composition, such as draperies, architectural details, and foliage, so that adaptation to spaces may be effected without undue strain or seeming effort. On Plate XLI., which consists of the adaptation of figures to variously shaped spaces, Figs. 1 and 3 show kneeling figures adapted to a square and circle. It will be seen that in both cases the object has been to evenly distribute

the action of the figures so as to fairly fill the shapes. Recognising the rectilinear character of the square, the figure is so arranged that its angularities are brought out, and auxiliary details are so introduced that the whole mass may repeat in a measure the shape of the space. The figure, of course, might have been more severely fitted to its space, thus: but the effort would have been too obvious, as is the case in Fig. 9. In Fig. 3 the curved perimeter is the dominating influence; so that the development of angularities is not necessary, except by way of contrast, rounded forms being required for harmony. The curve of the back of the figure flows in an almost parallel direction with the right-hand side of the space, while the vase and spray of leaves balance it on the other side. In the annexed illustration is given an example of the adaptation of the figure to a space bounded by a curve and straight line: Fig. 2, Plate XLI., shows the decoration of an elliptical-shaped panel by a youthful figure arranged as a "spot" within an imaginary line harmonising with the boundaries of the shape. Fig. 4 is from a design by the late Alfred Stevens, and shows an easy and harmonious adjustment to a given space; the

FIG 1

FIG 2

FIG 3

FIG 5

FIG 6

FIG 4

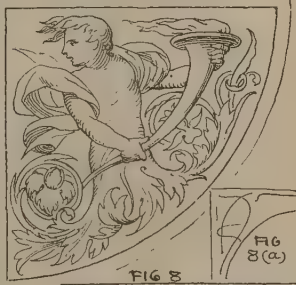


FIG 8 (a)

FIG 7

FIG 8

FIG 9

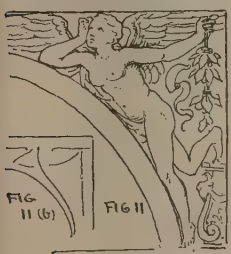


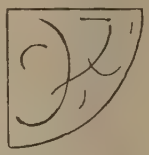
FIG 11 (b)

FIG 11

FIG 12

FIG 10

FIG J



leading lines of which are here shown: Fig. 5 is after Godfrey Sykes, and is an excellent example of the filling of a rectangular space (*see* the parallelism of the principal mass). At Figs. 8 and 11 are given examples of figure treatment in spandrels, with analytic sketches showing the lines upon which each is based. In Fig. 8*a* the first line drawn starts from below, parallel for some distance with the arch, afterwards diverging until it assumes a horizontal direction towards the vertical side of the spandrel. Lines corresponding to the wings are then put in to further repeat the horizontal boundary, while the lines of architecture are added to complete the composition. In Fig. 11*b* the starting line radiates from the arch in an upward direction; and at the termination on either side are horizontal lines. A vertical line is then introduced parallel to the upright side of the spandrel, upon which the details of the wreath, etc., are arranged. Fig. 10 shows the figure decoration of a narrow longitudinal rectangular space. Fig. 12 is selected from the illustrations to "Pan-pipes," by Walter Crane, to show how, in quasi-pictorial work, the composition of line is seen; note the uplifted arm and the line of the left leg. In the history of ornamental art we constantly meet with figures terminating in foliage. Some people there are

who deride such examples on the score of their impossibility, and, therefore, not to be used by the enlightened designers of to-day; but at the same time do not hesitate to convert the human animal into a six-limbed creature by adding wings to the shoulders—a combination no less impossible or monstrous than that they condemn. With such criticism, however, we have little to do, for our business as students is rather to ascertain the reasons for the creation of such creatures, and their employment in art. There are symbolic, harmonic, and other reasons for their artistic existence. The first consideration has been already pointed out; but there remains an important one, that of scale, a matter of high importance in a complicated scheme of decoration. If it were required to introduce the figure element into a space forming part of a design, it might very possibly be found that the use of an entire figure would give masses too small in size, as in Fig. 6, Plate XLI. But, by using a demi figure, as in Fig. 7, the defect in respect of scale would be remedied. Here it will be seen that by this means larger masses are introduced, and the quantities throughout the design are thus varied, while the dominant feature of the design—the figure—is accented.

To prevent a crudeness of effect in the bare use of a portion only of a figure, ornament was developed

from the sectional line, such ornament having harmonious relations with surrounding details. This treatment may have gradually obtained form in this way. Having found that a half-figure suited the scale of the work in hand, nothing would be more natural than to terminate it with drapery, as in Plate XLII. (*a*), a method which survives in the termination of sculptured busts; and, after due elaboration of the folds, any desire for further enrichment was no doubt satisfied by ornamenting the edges of the material by shaping the outline as at *b*. A little exercise of the imagination would convert these cuttings of the edges into foliated forms, as at *c*. For the purpose of further harmonising the foliage with the figure, as well as the details accompanying it, the addition was made to *grow out* of the figure, taking certain anatomical lines for the start, as at *d*. On the same Plate are given compositions of figures with and without ornament; figures amalgamated with foliage, and figures used as structural supports. Fig. I. is a design representing a frolic of amorini, by a French artist of the early part of the present century, and below it, Fig. I.(o), the elemental lines of the composition. Fig. III. shows a composition of figures with conventional foliage to fill an upright panel, and is accompanied by Sketch III.(A), showing its leading lines. Fig. V. is after a drawing by Le Pautre,

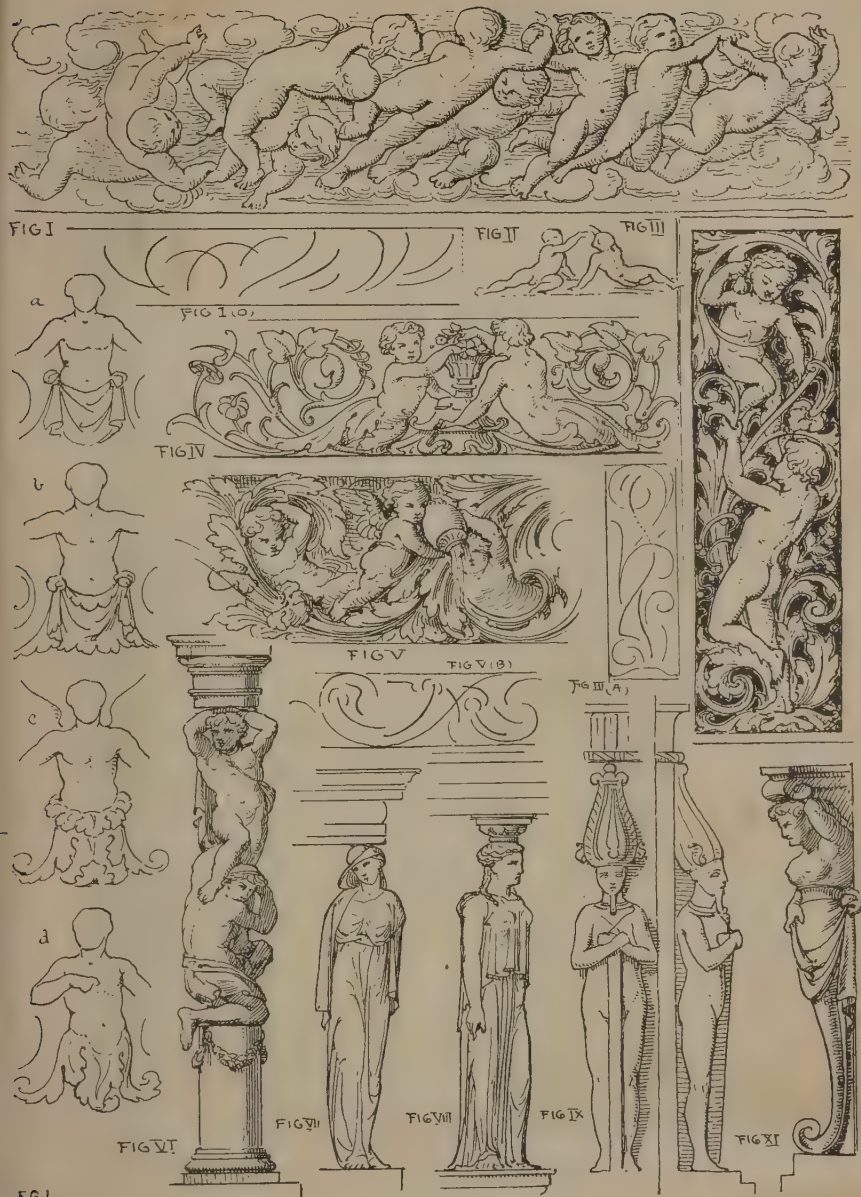


FIG I
FIG II
FIG III
FIG I (a)
FIG IV
FIG V
FIG V (B)
FIG III (A)
FIG VI
FIG VII
FIG VIII
FIG IX
FIG XI
a
b
c
d
F.G.J

illustrating the composition of figures with rich scroll work, and below it is given a diagram of the lines of its arrangement. Fig. IV. is an example of the amalgamation of figures and ornament; the lines of the latter were suggested by the action of the figures shown in the small sketches at Figs II. and III. Fig. VIII. is a drawing of a figure used as an architectural support in place of a column. This application of the human form by the Greeks probably arose out of their misconception of the Egyptian use of figures with their architecture, as at Fig. IX., in which it will be seen that the figure does not support the structure immediately above, although it may appear from the front view to do so. The figure rests against the wall; and, if it has any structural value at all, which may be doubted, it is that of a buttress rather than that of a column. The Greeks, acknowledging the want of fitness in employing animate forms for the support of massive superstructures, were careful to give to these caryatides, as they are called, a strong architectonic character, which to some extent concealed their inappropriateness. But, notwithstanding the skill shown in their treatment of the subject, the error is but disguised, and forms a bad precedent, a precedent which is answerable for much of the bad art exhibited in subsequent periods in the adaptation of figures to structural purposes. The artists of the Renaissance period,

seeing only the idea of using figures in place of columns, and without regarding the artifice practised by the Greeks to cover any weakness of effect, adopted a more or less natural treatment. In the pursuit of gracefulness of line they lost sight of the essential nature of a support: stability and strength; and they perpetrated caryatides and telamones that conveyed to the beholder an idea of insecurity. *See* Fig. VII., an illustration taken from a work on architecture by Philibert De L'Orme, also Fig. VI., a still later example from a German source, further showing the neglect of the principle of stability, notwithstanding the employment of strong muscular figures. Take the medial lines of all three of these structures, thus: and, on comparison, it will be seen what a much better conception the Greeks had of adapting an unsuitable subject to the purposes of columnar support. They based their adaptation upon the strongest line, a vertical one; their successors on curves, graceful but weak, having no supporting qualities whatever.

There is another class of architectural supports into which the figure element enters, used in a similar manner to pilasters, called termini, consisting of half-figures, or busts, and united by draperies or other ornaments to

pillars which taper downwards. In the example given in Fig. XI., it will be seen that the office of support is slight; the general purpose appearing to be that of the decorative filling up of the gap found to exist between the upper architectural projection and the face of the wall, to which the terminal is applied, rather than that of bearing any actual weight. On Plate XXXVII. some illustrations are shown of the treatment and application of wings to the human form. In Egyptian art the wing feathers are usually attached to the under-sides of the arms, thus avoiding the anomaly which would result by adding the whole of the wing structure, and giving them distinct points of attachment (*see* Fig. 4). The Assyrians in their winged figures altered this arrangement by making the wings to issue out of the shoulders, giving to the being six limbs instead of four (Fig. 7). Although this method of applying wings to the human subject is to the biologist the least satisfactory, it is the one that survives, and is, at the present time, the accepted way of dealing with these decorative appendages. Figs. 6 and 10, taken from vase paintings, show some Greek treatments of wings. In their upper margins the structures of the limbs are well and finely indicated. In the Renaissance examples, shown at Figs. 8 and 9, this outline is much exaggerated, and the curves do not agree with the hidden structure. Fig. 8 is from a

carved wooden chest, and, although the sinuous curved outline of the top of the wings is open to objection, the way in which the wings are applied is reasonable. They are developments of the arms, and not added limbs as in the case of the example below, Fig. 9.

In the course and current of decorative art, many fabulous creatures, partly human and partly animal, have been created, giving forms upon which artists of later periods have based their grotesques. To Grecian art, the central idea of which was the glorification of the human form, we are indebted for most of the mythical creatures that have been handed down to us. Rocks, trees, woods, mountains, rivers, and seas, Literature and the Arts, had each, in the Greek system, a human representative, depicted in an ideal form; and even natural calamities and the vices of mankind had symbols in human guise. When the latter, however, did not, in a sufficient degree, express the idea intended, animal forms were added for the purpose of rendering the symbol as complete as possible. Thus, in their personification of free, untrammelled woodland life, they gave to the figure of a man the legs and horns of a goat to intensify the idea of wild freedom, and hence resulted the mythical forms of Pan and Satyr (*see* Plate XLIII., Fig. 7). On this Plate will be found other fabulous creatures, which

may be briefly described. Fig. 1 is an Egyptian Sphinx having a human head and lion's body. The combination is a symbol of intellectual wisdom and power. The Greek Sphinx, Fig. 2, differs in form from the Egyptian one, as it is always represented as being of the female sex and having wings. It appears to have been adopted as the personification of malignity and mystery. She is credited with the practice of propounding riddles to those who visited her, and of tearing in pieces those who failed to solve them. Apart from symbolism, the gracefulness of the creature's form caused it to be employed in an æsthetic way, and it was a favourite ornamental element, frequently used in mural decoration, and for the adornment of bronze tripods, etc. It was used in a similar way and for similar purposes in Roman art, subject to modifications (*see* Fig. 3). At Fig. 4 is shown a combination of half man and half horse, called a *Centaur*, a creature which appears to have been the symbolic representation of a race of warriors who were celebrated for their great skill in horsemanship. It is said that their skill was so great that rider and horse appeared as one, hence the symbol. Fig. 5 is a similar combination of half woman and half deer, a mythical denizen of the forest. Fig. 6, a Siren, is a beautiful female with bird-like lower limbs, terminated by powerful talons. Wings are attached to the shoulders. Some

FIG 1

FIG 2

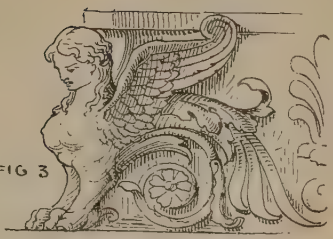


FIG 3

FIG 4

FIG 5

FIG 7

FIG 6

FIG 9

FIG 8

FIG 10

FIG 11

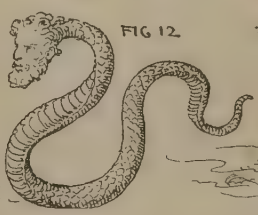


FIG 12

FIG 13

writers regard this creature as symbolising the unseen dangers belonging to rock-bound coasts. Sirens are said to have possessed wonderful voices, and with their sweet songs to have lured mariners on to their destruction. By others it is thought that they typify the delusive nature of human pleasures. Figures of sirens holding lyres were often chosen for the decoration of Attic graves, and would thus appear as mourners or wailers. Fig. 9 shows the form of a Harpy, composed of the head of a fair-haired maiden and the body of a vulture. Harpies were credited with wonderful rapidity of flight, greater than that of any known bird, and were considered to be the personification of sudden events. If a mortal suddenly disappeared, the harpies were supposed to have carried him off. If a sudden tempest arose they were regarded as its authors. Fig. 8 represents Triton, the attendant and trumpeter of Poseidon (Neptune), usually depicted as being half man and fish, having a shell which he used as a trumpet, and carrying a rudder in one hand. Fig. 13 shows an infant triton. Fig. 10, the head of Medusa, is an emblem of terror and extreme fear. *Medusa* was the most celebrated of the Gorgon Sisters, originally a priestess of Athene; but, having broken her vow of celibacy by listening to the wooing of Poseidon, and ultimately marrying him, was fearfully punished by the goddess; each of her beautiful

wavy locks of hair became a venomous serpent, and her person assumed a horrible aspect. Fig. 11 is another fabulous creature of the sea—a more peaceful form of siren, called a Mermaid. Fig. 12 is a man-headed serpent, used to symbolise subtlety guided by intelligence.

CHAPTER X.

THE EVOLUTION OF INDUSTRIAL OBJECTS—CUPS, VASES, ETC.

WHATEVER may be thought of evolution in regard to biology, there can be no doubt as to its being an important factor in the development of art, whether we regard the progress of a picture from its first rudimentary conception, or the gradual completion of useful objects based upon some primeval model rudely designed to immediately serve some special purpose. The history of industrial art exhibits the evolution of forms, by the endeavour to fully fit them to the varied necessities of mankind, and to meet the growing wants pertaining to the progress of civilisation. Did space allow, it could be shown how all the familiar and elaborate forms in furniture, jewellery, etc., were evolved out of very elementary beginnings, and how the changes were wrought

for reasons of convenience and in accordance with the altering conditions of society. While it is not possible to undertake so comprehensive a task, the purposes of such an inquiry will be served by directing attention to the class of objects named at the head of this chapter—namely, to the consideration of cups, vases, and other hollow vessels, showing their origin and development, and their artistic composition and decorative value as ornamental elements. The origin of these vessels is to be found in the wants of man in his early condition, who required some vessels of capacity, in which to collect water for drinking and other purposes. Doubtless, the cups or bowls were natural ones, such as the hard rinds of nuts, gourds, shells, and horns of animals (*see* natural types, Plate XLIV.). These ready-to-hand vessels were found to answer in a rough way the several necessities, and satisfied man's varied requirements, until his faculties were more fully awakened. When, however, a more cultured period in history was reached, we find that objects for similar purposes were fashioned out of plastic materials, and vessels more suited to special needs were made. The natural forms which had been used influenced, more or less, the artificial productions. In early pottery, while some forms were copied from natural types, other shapes were purely inventive, specially designed to meet the increasing wants of

an advancing civilisation. When a natural cup fulfilled its useful purpose, its reproduction showed but little departure from the original model, but when it was felt that certain requirements were but imperfectly met, modifications took place. When new wants arose, and no natural form answered to his necessities, man's inventive powers were stimulated into action, and this activity resulted in the creation of new vessels, suitable to the particular needs of his improving condition. But while these inventive shapes answered his purpose in some degree, they were necessarily incomplete, as most first conceptions are, and, consequently, we find they were subject to, and modified by, developments in the direction of fitness. Let us take an example by way of illustration. The first notion of forming a vessel for catching water from a spring would be a wide-mouthed bowl, with the addition of handles for carrying: Now, although well designed for receiving the water, it was not so well adapted for the

after process of conveyance from the spring, because the motion imparted to the large surface of water at the orifice of the vessel, by the act of carrying, would cause it to be easily spilled. For carrying purposes a narrow-mouthed vessel was the better. The two conditions, however, of receiving and carrying had to be provided for, and so we find the form has been modified

by a consideration of the double use, thus: Here, while the wide mouth is retained, the underpart is narrowed in order to present

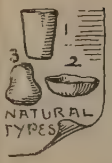
a smaller oscillating surface; consequently reducing the chances of accidentally spilling the contents. For similar reasons we find at the present day that in country places, where water is often carried for some distance in open buckets suspended from a yoke, a float is commonly used, composed of two pieces of wood nailed together crosswise, thus dividing the surface of the liquid into narrow sections: Now turn for a moment to the consideration of one of the simplest of the primitive forms of drinking cup, the one, perhaps, suggested

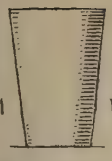
by a section of an animal's horn, as Fig. 1, Plate XLIV., a form similar to the modern glass tumbler. This form, as we shall see, is the parent of the modern vase, and has been developed through the successive stages of the beaker and hanap to the fully constituted vase with its multiplicity of parts.

Throughout the ages mankind has never been wholly contented with merely satisfying his utilitarian requirements. However well a useful object may have served its special purpose, it has never been allowed long to remain in its bare and simple condition. There has always been a tendency to elaboration, not only by the

addition of decoration, but by the enrichment or refinement of the contour of the object itself. This form of elaboration is often the result of a finer perception of the law of fitness, as well as of the desire for beauty and variety of form. The progress of art has always been from the severely simple to the ornate and complex.

The use of this horn shape in various materials shows it to be a fairly serviceable one; but to some minds it has appeared that it would be further improved by provision being made to prevent its slipping from the hand, and also from being so easily overturned. The tendency to slip while holding has been counteracted in two ways: first, by alteration of the outline (*see* Fig. 3); secondly, by the addition of a moulding or mouldings (Fig. 4). Stability has been given by extending the area of support, as in Figs. 2, 3, and 4. (In the modern glass tumbler stability is secured by the additional weight of material at the base.) Other changes came about from æsthetic reasons, and were added without interfering with the usefulness of the object; for instance, after the addition of the foot, greater variety was given to the form by turning in the lower part of the body and introducing a short stem (*see* Fig. 5). The change in the outline necessitated the addition of a moulding which also marked a further


1
2
3
NATURAL TYPES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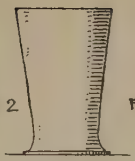


Fig 2

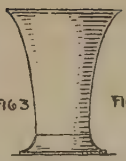


Fig 3

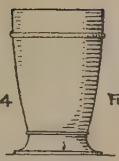


Fig 4

Fig 5
LIP
FRIEZE
Body
CALIX
FOOT

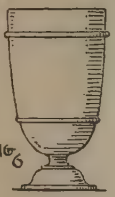


Fig 6

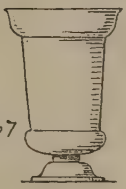


Fig 7

Fig 8

Fig 9

Fig 10

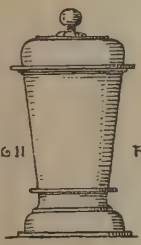


Fig 11

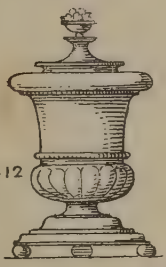


Fig 12

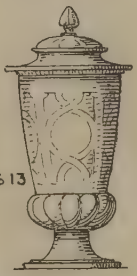


Fig 13

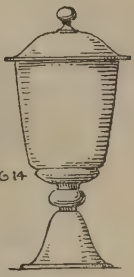


Fig 14

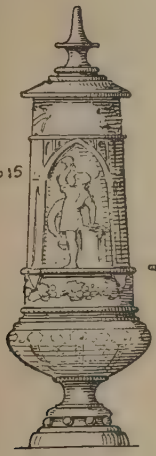


Fig 15

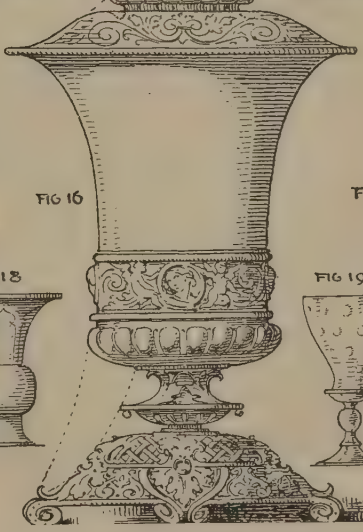


Fig 16

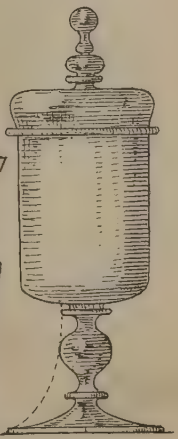


Fig 17

Fig 18

Fig 19

division of parts, giving us in a rudimentary way all the members of a developed beaker, which may be enumerated thus: lip, body, calix, stem, and foot (*see* Fig. 5). Amongst the early forms of beakers we have four varieties: the straight, the convex, the concave, and ogee (*see* Figs. 2, 3, 4, and 8). The process of development which led to the varieties now given did not stop here; further changes are to be noticed which resulted from the application of a different principle, to which allusion has not yet been made—namely, the principle of partial development, as (1) the development of the calix (Figs. 7 and 10); (2) the frieze and lip (Figs. 7 and 18); and so on. For the purpose of keeping out the dust, covers were subsequently added (*see* Figs. 11 and 14).

On Plate XLIV. are shown various forms of beakers, including the examples already referred to. Figs. 1–10 are designed to show the different forms developed in early times. The rest of the illustrations are taken from various sources. Fig. 11 is a Flemish form of the seventeenth century, Fig. 12 a German Renaissance example, Fig. 13 is modern English, Fig. 14 is an old Venetian shape, and Fig. 15 is taken from Flemish stone-ware. Fig. 16 is from a drawing by Holbein, a very graceful composition. Fig. 17 is a sketch from a German glass hanap in South

Kensington Museum. Fig. 18 is Japanese, and Fig. 19 from Venetian glass.

The word hanap now appears in connection with these covered beakers; but, while there is a show of reason for so naming them—as the term hanap signifies a covered vessel—yet it is usually applied to the next stage of development under consideration. Covered beakers came to be made of large size—so large that they could not be handled without great inconvenience—and this led to an alteration in construction. To make them convenient for lifting, two courses were open, either to elongate the stem so that it might be grasped, or to add a side handle. The first, which immediately concerns us, produced the hanap, the second developed the tankard. With the elongation of the stem came the introduction of another member, the knop (*see* Plate XLV., Fig. 8), for the purpose of presenting a firmer grip, and to prevent the vessel from slipping in the hand. The stem now being extended, we find that the knob, or finial, of the cover acquired increased importance, and this for artistic reasons. But whether the height of the finial found in some covered beakers called for a more lengthened stem, and directed the choice between the two methods of construction before alluded to, or whether the development of the knop came in with the elongation of the stem, is of little consequence, seeing that the æsthetic

result is the same. The various parts of a hanap as now developed are illustrated at Fig. 8, Plate XLV. We have now to see what further developments took place in the process of elaboration. As luxury advanced, these drinking vessels became enriched in every possible way, and were ultimately regarded as articles for show rather than as articles for use—as rich adornments for rooms of state to be displayed on special occasions. The possession of such articles often indicated wealth; and even the particular form of *étage* upon which they were placed indicated the rank of the owner. The enrichment of these hanaps appears to have been mainly effected by three modes of procedure, all of which bear upon the contour: first, by adding variety to the outline; secondly, by developing parts; and thirdly, by sub-division. To these methods some allusion has already been made in reference to beakers; but their full importance will be better appreciated when considered in relation to the more fully developed vessels. One important alteration in the outline arose out of the nature of material and the method of working. The ductility of metal allows of its being wrought into cups of great lightness, a quality requisite for a vessel to be handled; but, though a cup of this kind should be light on this account, it is necessary that it should also be strong to resist any damage to its surface by

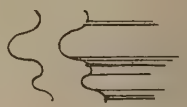
FIG 1
FIG 2
FIG 3
FIG 4
FIG 5
FINIAL
KNOB
COVER
FRIEZE
BODY
CALIX
KNOP
STEM
BASE
FIG 8
FIG 6
FIG 7
FIG 9
FIG 10
FIG 11

indentation. So we find that one method employed consisted of bulging or beating out the light material into certain regular forms, and thus securing the two important desiderata: lightness and strength: This characteristic mode of working, while answering its useful purpose, was soon adopted

as a decorative feature, and was often used on certain parts of these objects for the sake of artistic balance alone (Plate XLV., Figs. 1, 4, 5, and 6). Another source of enrichment, arising out of construction, was found in the necessity of adding small cast metal supports at different points of the stem, to give strength and stiffness to the whole. These were in the first place adopted to counteract any pressure that might be brought to bear upon the vessel. The part where undue strain and, therefore, injury was likely to occur, was at the junction of the calix and stem (Figs. 3, 6, and 7). These supports, while they gave firmness to the work, produced a pleasing effect, and doubtless suggested to the mind of the worker extended applications. Hence their use soon became a matter of ornament, and details of this kind were applied where they were not actually requisite, but merely as contributing to the æsthetic effect. Like all other ornaments arising out of necessity, these have been abused, and, where little or no restraint has been exercised in their use, they

have degenerated into fussy and unmeaning adjuncts, as in Fig. 11. It has been pointed out how some of the variations in the general forms of beakers may have arisen, and examples have been given. These changes were retained in the subsequently developed hanaps, as will be seen in the collection of examples on Plate XLV.

Figs. 1 and 2 are hanaps of the Gothic period, showing rich decorative use of bulbous forms. Fig. 3 is from a seventeenth century example of English goldsmiths' work; Fig. 4 belongs to the same period. Fig. 5 is an illustration of the fanciful treatment of the bulbous forms, originally beaten out to give strength to the metal, as already explained, and adopted by many masters of the sixteenth century. Figs. 6 and 9 are sketches of rich hanaps taken from etchings by Virgil Solis. Fig. 7 was drawn from a small vase of the cinque-cento period, in the South Kensington Museum. Fig. 8 is a diagram showing all the various parts of a hanap to which the reader's attention has already been called. Fig. 10 is taken from an Italian example. Fig. 11 is from a design by one of the "little masters of Germany." The four diagrams on the lower part of the Plate are given to show the probable lines of construction of some of these vessels. The small arrows indicate the hanap to which each belongs.

A change in the shape of the lip, which led to the formation of the fully developed vase, has yet to be noticed. The body of the vessel, instead of terminating in an open lip, as in beakers and hanaps, was gradually closed in, and a shoulder formed like an urn. The object for this does not appear, but probably it came about from following some different natural type, such as a gourd. This turning-in of the lip necessitated, for some purposes, the introduction of another member, a "neck," the upper margin of which, turning outwards, received the cover (*see* Plate XLVI., Figs. 1 and 2). Here, then, we have all the parts of a complete vase. Any further enrichment of contour was effected by the sub-division of the various parts, rather than by the addition of any new members (with the exception of handles, which will presently be considered). The sub-division into minor parts by the addition of mouldings not only has the effect of enriching the contour (*see* Figs. 13 and 14), but gives fineness of character to the work; and, what is of more importance still, expresses the quality of strength. By the introduction of mouldings at the different changes of curvature, almost any outline, however weak, may be made firm and strong (*see* Fig. ).

The rest of the examples on Plate XLVI. illustrate

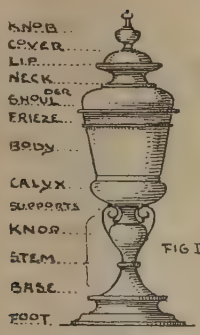


FIG 1

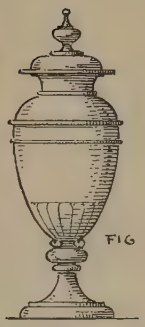


FIG 2

FIG 3

FIG 4

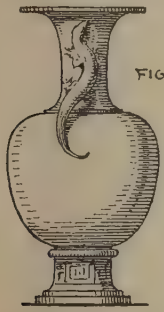


FIG 5

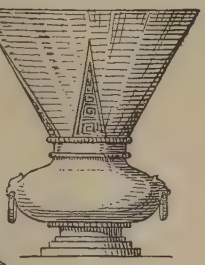


FIG 6

FIG 9

FIG 15

FIG 10

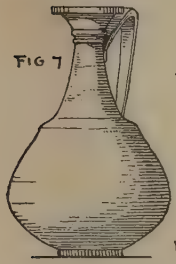


FIG 7

FIG 8

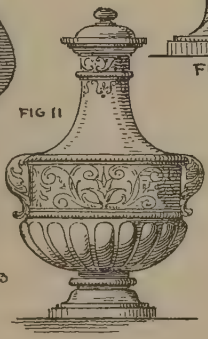


FIG 11

FIG 12

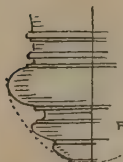


FIG 13

CALYX SUBDIVIDED

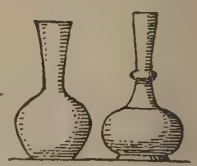
FIG 14

COVER SUBDIVIDED

FGT

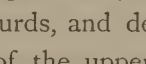
the various developments of vases. Figs. 3 and 4 are Italian designs, given to show the different treatments of the neck and lip, particularly the latter, which is rounded inwards. Figs. 5 and 6 are Japanese variations of the neck and lip (the covers are absent). In Fig. 5 the neck is vertically developed and merged into the lip, which is greatly expanded. In Fig. 6 the body and neck are repressed, while there is an enormous expansion of the lip. Figs. 7, 8, 9, and 10 are given to illustrate the development of bottle-like forms. Fig. 7 is a Sardinian shape, Fig. 8 is Greek, Fig. 9 Japanese, and Fig. 10 Indian. Fig. 11 is an Italian vase of the fifteenth century, simple, and well balanced in form and decoration. One illustration is given at Fig. 12 of a carved vase, wherein the plan is angular instead of round, from a design by Gibbs, an architect of the eighteenth century. Fig. 15 is a rich and sumptuous two-handled vase, in the Italian style of the latter end of the sixteenth century.

From the vase a class of useful hollow vessels appears to have been developed, to which carafes and various other bottle shapes belong. These forms result from an elongation of the neck immediately above the shoulder, thus:



(*see* also Figs. 9 and 10), serving as a handle by

which it might be lifted up. Some examples, however, are often met with which seem to indicate that they were primarily suggested by natural forms, like calabashes or other gourds, and developed in like manner. The development of the upper portion of these bottle-like forms was accompanied by the gradual suppression of the stem; ending in its total disappearance owing to its being no longer useful.

Another form of cup, the chalice, appears to have been developed from the primitive bowl. In ancient Greek art we have  drinking bowls raised on a short stem, thus: These furnish examples of the initial stages in the course of development. The next step seems to have been the elongation of the stem and the suppression of the side handles, which became unnecessary:

This form of drinking cup is the one that was most generally adopted for religious purposes, and many of the subsequent changes in its form were brought about by considerations of structure, and of the nature of the special functions which it had to serve. The knop was added to the stem for the reason which led to its adoption in the case of the hanap. The base, however, was, for ritualistic reasons, greatly extended beyond the dimensions assigned to similarly shaped vessels; it often exceeded the diameter of the bowl

itself. This was done in order to minimise the danger of upsetting the chalice and so spilling the precious wine which it was designed to hold. An accident of this kind was held by ecclesiastics to be a very serious matter, and, therefore, it was to be provided against in every possible way. Hence the form became as in Fig. 1, Plate XLVII. Another change arising out of special use was the alteration of the plan of the base from the circular to a more complicated form. It was the ancient practice to place the chalice, after use, to drain into the paten. A circular base would render the object liable to roll out of its position, and so, to prevent this, the base was either indented, scolloped, or angularised, as in Figs. 4, 5, 6, and 7, and as shown in the small plans, *a*, *b*, *c*, and *d*. Here, then, we have the main characteristics of the chalice: small bowl, tall stem, knop, and wide non-circular base. The earliest form of chalice differed but little from the old classic drinking cup mounted on a stem; but gradually departed from it. In the earliest departure, the bowl became a plain half globe, the stem tall and the base spreading. Subsequently the bowl became deeper and straight-sided, the stem still higher, and the base shaped. Coincidently with these changes in general form, enrichment of the profile and surfaces of these objects came in. The stem was enriched by sub-division as in other vessels. Certain parts

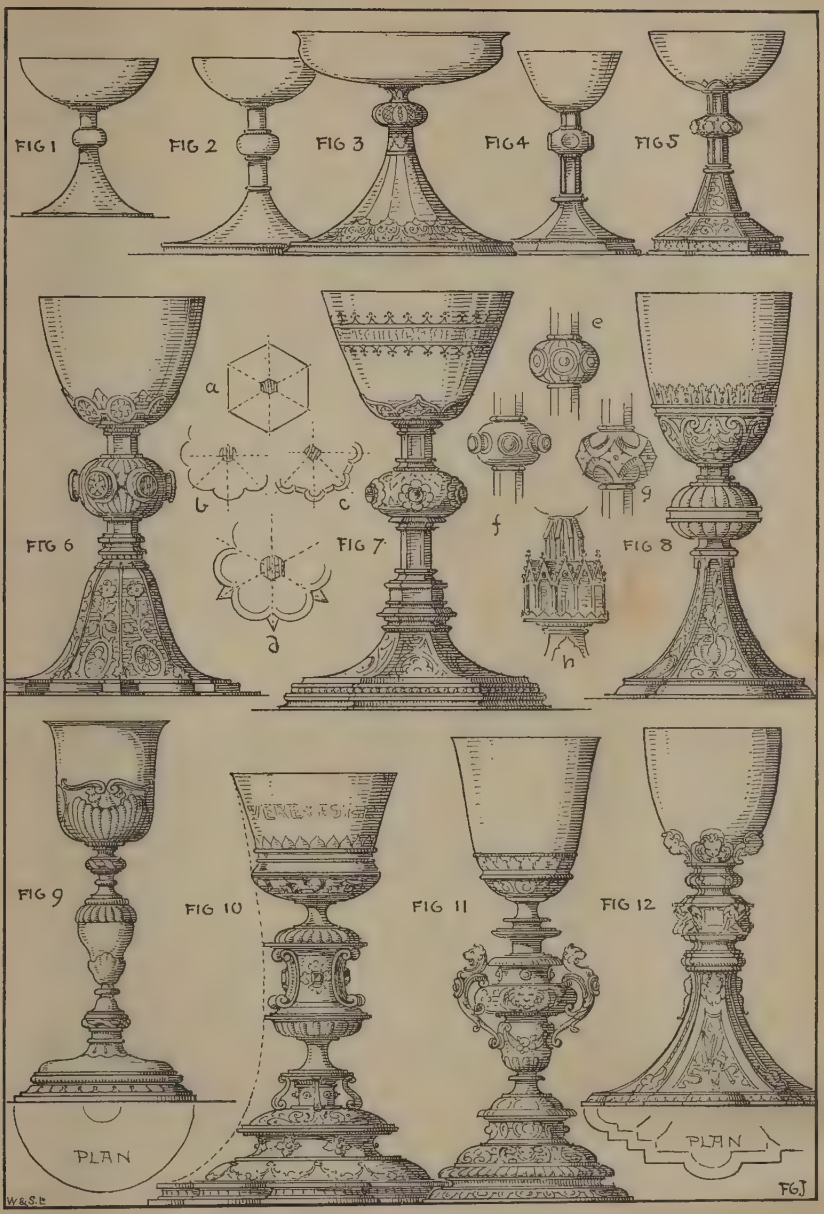


FIG 1
FIG 2
FIG 3
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FIG 8
a
b
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d
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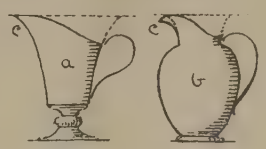
f
g
h
FIG 9
FIG 10
FIG 11
FIG 12
PLAN
PLAN
W&S.E
FGJ

appear to have received special attention, such as the knop and the base; the large surface presented by the extended base offering a fine field for the decorative artist. The fullest advantage was taken of it, and here all the resources of art have been expended (*see* 6, 7, and 8, Plate XLVII.). The knop has also been subject to artistic enrichment, but often it has been unwisely treated (*see h*, Plate XLVII.). The useful purpose which originated this enrichment has been lost sight of by the decorator, pointing a moral that decoration should never interfere with usefulness, and that *effect* is not the only consideration to be regarded in designing ornament.

Further illustrations are given on the same Plate of chalices belonging to different periods, exhibiting the various changes, already alluded to, which have taken place in their development. Figs. 1, 2, 3, and 4 are diagrams showing the alteration in stems and bowls. Figs. 3 and 5 are thirteenth century examples. That of a chalice discovered near Dolgelly, North Wales, 1890, is from a sketch which appeared in *The Illustrated London News* of that year. The other is taken from Sir Digby Wyatt's book on "Metal Work." Figs. 6, 7, and 8, also from Wyatt's "Metal Work," are later examples, as shown by the deepened bowls, and the decoration of these and other parts of the vessels. The

remaining illustrations show the elaboration of the chalice during the Renaissance period. Figs. 10 and 11 are sixteenth century examples, and respectively are of Spanish and Italian workmanship. Fig. 9 is French of the eighteenth century, while Fig. 12 is Italian, taken from a drawing in the South Kensington Museum.

We will now pass on to the consideration of another class of hollow vessels, the jug and ewer. These appear to have been evolved by a different process from that which generated the vessels already dealt with—*i.e.*, by adding a side handle for lifting, instead of using the stem for that purpose. Ewers may have been derived from vases and beakers in this way, as an examination of various historic examples suggests: by repressing the stem, as its office is superseded by the addition of the handle at the side; and by cutting the lip obliquely downwards, as at *a* and *b*, the beak *c* formed by the process being afterwards developed and shaped to further facilitate the deliverance of liquids. Some forms of these are shown on Plate XLVIII., Figs. *c*, *d*, and *f*, with sketches in plan at *a*, *b*, *e*, *g*.



The records of ancient Greek art will supply examples of objects, so developed, which have furnished the moderns with models for imitation and elaboration

(*see* Plate XLVIII., Figs. 1, 2, 4, and 5). An important consideration in the application of handles to pouring vessels is their proper relation to the lips and spouts of those objects, so that the weight of the vessel and its contents may not be against the action of pouring. Too often mistakes are made in this respect by either following some antique model which was formed for another purpose than that of pouring, or by treating the handles as ornamental adjuncts, without regard to their full and complete usefulness. Take any ewer with a tall handle, and endeavour to ascertain by a few experiments which part of the handle it is best to grasp for easy lifting, reversing, and delivery of its contents; and it will be discovered that it will be at a point near to, and a little above, the centre of gravity of the whole mass. This shows that it is of the highest importance to determine the central point,* in order that the handle may be placed in right relation to it and in balance with the lip; that the

* This may be sufficiently accomplished in the following way: Cut out in cardboard the form of the proposed vessel, and regard it as a section of a vertical plane passing through the middle of it when in an upright position. Draw a vertical line through the centre of the card, then suspend it from any convenient point in its edge, and from that point let fall a vertical line crossing the first. The intersection of the two lines will be the centre of gravity required.

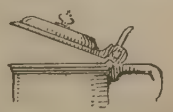
FIG 1
FIG 2
FIG 3
FIG 4
FIG 5
FIG 6
FIG 7
FIG 8
FIG 9
FIG 10
FIG 11
FIG 12
HANDLE COMPOSING WITH LIP
HANDLE COMPOSING WITH BODY & LIP
a
b
c
d
e
f
g

action of lifting and reversing, for discharging the contents, may be accomplished with the least possible effort. This adjustment of handles, according to the balancing centre of vessels of capacity other than those for pouring, applies with equal force to such as are used for carrying by suspension or by support.

On Plate XLVIII. are given examples of ewers and jugs, illustrating the treatment and adjustment of their handles. Figs. 1, 2, 4, and 5 are Greek forms of simple character, with handles more or less usefully applied and pleasantly composed with their shapes. Fig. 3 shows a richly decorated ewer, attributed to Benvenuto Cellini. The handle is not well placed for lifting and pouring; but, although in this respect it is not useful, the handle is of graceful form, and is well composed with the vessel it adorns (*see* the dotted lines). Fig. 6 is another ewer of the Italian Renaissance, the handle of which, like that in the former example, is placed too high for ease in handling. In this case, however, the defect is somewhat atoned for by the space between the lower attachment of the handle and the "neck," thus allowing the handle to be grasped at a more convenient place. Fig. 7 is an Italian shape, on which a small winged figure is placed in front to balance the fanciful handle. It would appear from this that the designer was more careful to bring all parts of

his design within a symmetrical outline than to make a serviceable object. Fig. 8, an example of French Renaissance, is of simple form, the stem and foot of which are rectangular in plan. The handle is well placed for fulfilling its purpose. Fig. 9 is an elaborately ornamented ewer by an unknown artist of the sixteenth century, and is another example of attaching a handle as an ornament instead of for easy use. Figs. 10, 11, and 12 show the proper adjustment of handles with due regard to composition, and the shapes to which they are applied.

Besides jugs and ewers, we have other varieties of hollow vessels with side handles, such as tankards and flagons. The tankard used for drinking purposes was, as before intimated, developed from the covered beaker. The type upon which it was generally formed appears to have been one having a wide-spreading base, as in Plate XLIX., Fig. 1. Some historic examples are met with which follow a type having a necking as in Fig. 4 on the same Plate. In addition to the handle, a distinctive mark of tankards is the attachment of the cover to the top of the handle by a hinge, and a small lever or thumb-piece for lifting it up. This arrangement enabled the drinker, while grasping the handle of the vessel and conveying it to his mouth, to raise the lid by simply



pressing the lever with his thumb. The uncovering of the tankard by this means did away with the necessity of retaining the finial, which was essential for removing the unattached cover of the beaker; and so this feature was either partly repressed or discarded altogether. When used, however, it is only for æsthetic reasons, as a matter of composition, and to correct what to some may appear to be a too abrupt termination of the object. Tankards are mostly cylindrical in general form; the varieties which deviate from this shape are similar to those beakers which they appear to follow. Later, however, these vessels taper upwards. This alteration in form led to the flagon, which is distinguished from the tankard by increase of size and the narrowness of the mouth; the latter being sometimes developed into a beak, or spout. On Plate XLIX. are given various forms of tankards and a flagon, to further illustrate the foregoing remarks on these vessels. Figs. 1, 2, 4, and 5 show elementary forms of tankards, from the squat cylindrical shape to the more elegant tapered form, which finally resulted in the flagon. Figs. 3, 6, 7, 8, 9, 10, and 11 are decorated examples, which in most cases appear to follow the lines of the former, and which also illustrate the repression of the finial, to which allusion has been made.

Having now traced the development of a few of the

FIG 1
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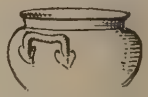
FIG 14
FIG 15
FIG 16
FIG 17
FIG 18

important hollow vessels, it will be well to offer a few remarks upon handles generally. Handles may be broadly classified into: first, those which have a vertical direction (*see* Figs. 1, 2, 3), and, secondly, those which are horizontally disposed, as



They are attached to vessels designed for various purposes. The particular purpose of any individual object determines the form of handle to be used, whether of the first or second kind. Vertical handles are appropriate for lifting and pouring vessels, horizontal ones for vessels for carrying and transporting liquids. Of the first class there are varieties—namely: (*a*) those which are attached at one point only, (*b*) others which touch at two points, while others (*c*) are attached along the whole of their inner surface. We have now to look at their ornamental development. The extremities of handles where they joined the body of the vessel to which they were applied naturally widened out to give a large connective surface, that the attachment might have the fullest security. These parts were the first to receive decorative attention, and hence we find them elaborated as shown in sketches here given:

Again, to the middle part of the handle, attention was directed to fit it more perfectly for its purpose. A smooth handle of uniform thickness (*see* Fig. 1) would be

liable to slip in the hand, and so it widened out, either gradually, or by adding distinct prominences according to convenience (*see* Fig. 2). This also offered a field for decoration of which advantage was taken, and at last the ornamentation extended throughout its entire length (*see* Fig. 3). Some vertical handles are often seen which combine the horizontal principle in their construction—*i.e.*, their extremities spread out laterally—and, while being more decorative, appear to have a firmer hold of the vessel to which they belong (Fig. 3). Handles, having only one point of attachment, were subject to different forms of development, arising from difference of character and from the use to which they were put. The upper part, being detached, terminated differently, and often finished with a scroll turned inwards. This served the purpose of checking any tendency to slip in the hand, and consequently there was no necessity, as in the preceding variety, to introduce anything in the middle for the same object; and so there was one point less from which ornament could reasonably be developed. For further illustrations of the treatment of vertical handles the student is referred to Plate XLIX., where he will find other examples, besides those applied to tankards, at Figs. 12, 13, 14, 15, 16, 17, and 18.

The object in tracing the development of these varieties of cups, etc., has been to show their inventive and imitative origin, and to direct the attention of the

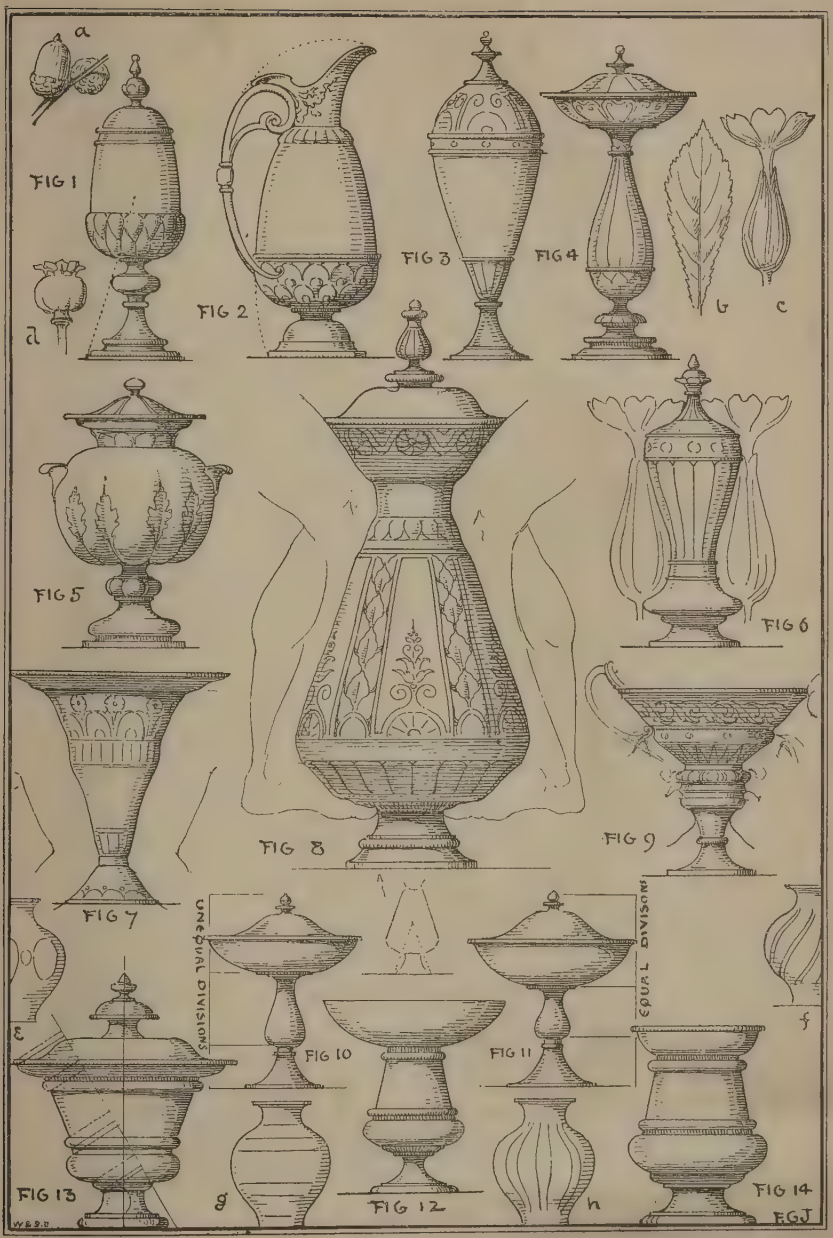
student to the first principles which should guide him in his endeavours to originate new forms. While he must largely cultivate his inventive faculty, he must limit its exercise by the particular necessities of the case. The brief survey we have been able to give indicates that some forms with which we are familiar were originally suggested by natural objects. This source of inspiration is always open to us, and many a valuable hint may be culled from nature and utilised by the designer. He is not to copy natural forms wholesale, and force them to serve other purposes than those intended by Nature herself; but to adapt by his inventive powers any suggestion which they may yield. For example, the form of the acorn (*a*, Plate L.) may arrest our attention, and we may desire to adapt it to a cup of the hanap type. We first take the form, having regard to the subtlety of curve and general proportion; here our imitative work ends, and our inventive power begins its function. To make it serve the purpose of a covered cup, we cut it across and put on a moulding to mark the division, and to provide a fitting for the cover. We then add a knob for raising the cover, and a stem for support, by which the whole vessel can be lifted (*see* Fig. 1, Plate L.). To simply copy the form and raise it upon a "rustic" stem with leaves, and, for fear of disturbing the likeness to the original, to conceal, as far as possible, the opening, thus:

is a procedure which, while it may please the thoughtless and unskilful, cannot but make "the judicious grieve." To look to nature for models for imitation is to narrow our means; to study nature for suggestions is to widen our resources. Leaves, buds, flowers, fruits, and animal forms will all yield to the diligent student ideas which will stimulate his inventive powers. On the same Plate are given other illustrations of the adaptation of suggestive natural forms. Fig. 2 is a design for a jug, based upon the acorn. Fig. 3 a vase, suggested by the general form of a leaflet of the horse-chestnut sketched at *b*. Fig. 4 shows a form derived from the outline of the campion flower, as at *c*, and immediately below (Fig. 6) is another shape obtained from the same natural form by utilising the space between two drawings of it. From the human form, which of all created things contains the most beautiful and subtle lines, can be extracted many pleasing shapes by simply repeating the contour of some detail on either side of a vertical axis, thus:

or by filling in the space occurring between two profiles symmetrically disposed, as shown on Plate L., Figs. 7, 8, and 9. Of course, in selecting a natural form for the purpose of new shapes, it will be desirable to consider its suitability to the particular case in hand, whether for a useful or a purely decorative object. Again, other means of developing varieties of form

will be found in lateral and vertical expansion, partial development,* and varying the angle of inclination. In designing a vase or cup, the attention naturally centres on the body first; and, whether we start with a purely inventive form, or one suggested by nature, the next difficulty that presents itself to the student is the composition of a stem and foot suitable to the main part of the vessel. A good method to aid the accomplishment of this end is to continue the general line of the body downwards in a simple and easy way, forming a pleasant shape that will harmonise with the form above, and to let that outline regulate the profile of stem and foot. By this means it will be found that, whatever projections may be made, will be in an agreeable and progressive order. An extended application of this method to the whole design is often desirable, either by way of testing the various projecting parts, or for the purposes of development. For instance, suppose that to a completed design an outline of a simple form be applied, it may then appear that a moulding or some other feature of the composition could, with advantage, be extended or repressed. By reversing the process, starting with a simple controlling shape and developing the form within it, the student will be more likely to secure those qualities, so important in a design (*see* Plates XLV. and XLVIII., where the controlling lines are indicated):

* *See* Chapter IV., "Lessons on Decorative Design."


a
FIG 1
a
FIG 2
FIG 3
FIG 4
b
c
FIG 5
FIG 6
FIG 7
FIG 8
FIG 9
UNEQUAL DIVISIONS
EQUAL DIVISIONS
e
FIG 10
FIG 11
f
FIG 13
g
FIG 12
h
FIG 14
E.G.J

gradation and unity. Whatever methods may be adopted in order to realise original and beautiful forms, proportion and stability must be regarded, for, without these, the composition would be defective. Good proportion will depend largely upon the variety in the dimensions, both lateral and vertical. When these are equal, or nearly so, the less satisfying will be the general effect; because there will be too much repetition, and, as a consequence, a lack of interest and vivacity due to the absence of variety and contrast (*see* Plate L., Figs. 10 and 11). But while it is important that in the adjustment of parts there should not be equality of quantities or dimensions, neither should the other extreme prevail. The differences should be such that, while they are apparent enough to give pleasure to the eye, they should not be so great as to interfere with the repose and unity of the design. Excitement from too much contrast is exhausting; too much repetition is wearisome. To secure agreeable proportion, therefore, in dividing the height, there should be a leading or dominant division, to which all others should be in pleasant relation; while simple controlling forms, imagined or drawn, will regulate and limit the lateral projections in harmonious proportion. It will be obvious that what has been advanced as regards proportion in the general shapes of vases, applies with equal force to the laying out of the surfaces of plain forms for decora-

tion, whether divided by vertical, horizontal, or oblique lines. If horizontal, they should be graduated agreeably to the outline; if vertical, the spaces will naturally graduate with the shape to which they are applied. To ensure the necessary amount of uniformity, the spaces will have to be repeated round the circumference in regular order, and may be in equal or alternating quantities. The necessity for unequal divisions in this latter case is not so great as in the first, as it is not possible to view circular vases, so divided, without the modifications of perspective. In Figs. *e*, *f*, *g*, *h* are shown four different ways of setting out surface decoration on vases: by spotting, oblique, horizontal, and vertical striping. Two or more of the methods may be combined, or the whole surface may be covered with a pattern. Stability is another condition which should be observed; every form that may be classed with these under consideration, should not only be made to stand firmly and well, but should have the look of being well balanced. A vase may be constructed with a narrow foot and be made quite secure by loading or weighting the base; but this will not make the work satisfactory to the eye, for, notwithstanding the device, it will always look insecure and unsafe. Apart from the necessary width of the base, there is another way in which the quality of stability is likely to be interfered with —namely, in the use of animals and figures in place of a

proper structural stem. A figure made to support a vase or cup, and more particularly if in action, will convey to the mind an idea of unsteadiness, no matter how well it may be executed. Besides which, the use of figures for direct support will always be productive of painful impressions by reason of constrained positions and implied continuous action. To use them is an offence against good taste, and therefore to be avoided. Carelessness in design has much to do with errors of this sort; harm is often wrought by want of thought. When figures have been used in this faulty way, as in No. 1, it is often apparent that a similar effect might have been obtained, with a more satisfactory result, by using them in conjunction with a more reasonable support, as in No. 2.

No. 1.

No. 2.

FINIS

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